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S. HRG. 104–768

# *Senate Hearings*

*Before the Committee on Appropriations*

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Departments of Veterans Affairs and...

# Departments of Veterans Affairs and Housing and Urban Development and Independent Agencies Appropriations

*Fiscal Year* 1997

104*th* CONGRESS, SECOND SESSION

H.R. 3666

CORPORATION FOR NATIONAL AND COMMUNITY SERVICE
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
DEPARTMENT OF VETERANS AFFAIRS
ENVIRONMENTAL PROTECTION AGENCY
FEDERAL EMERGENCY MANAGEMENT AGENCY
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
NONDEPARTMENTAL WITNESSES

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# DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT AND INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1997

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# HEARINGS

BEFORE A

## SUBCOMMITTEE OF THE

## COMMITTEE ON APPROPRIATIONS

## UNITED STATES SENATE

ONE HUNDRED FOURTH CONGRESS

SECOND SESSION

ON

## H.R. 3666

AN ACT MAKING APPROPRIATIONS FOR THE DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT, AND FOR SUNDRY INDEPENDENT AGENCIES, BOARDS, COMMISSIONS, CORPORATIONS, AND OFFICES FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1997, AND FOR OTHER PURPOSES

**Corporation for National and Community Service**
**Department of Housing and Urban Development**
**Department of Veterans Affairs**
**Environmental Protection Agency**
**Federal Emergency Management Agency**
**National Aeronautics and Space Administration**
**Nondepartmental witnesses**

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# DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT AND INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1997

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**TUESDAY, APRIL 30, 1996**

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
*Washington, DC.*

The subcommittee met at 9:30 a.m., in room SD–192, Dirksen Senate Office Building, Hon. Christopher S. Bond (chairman) presiding.

Present: Senators Bond, Campbell, and Mikulski.

## FEDERAL EMERGENCY MANAGEMENT AGENCY

### STATEMENT OF JAMES L. WITT, DIRECTOR

**ACCOMPANIED BY:**
- **GARY JOHNSON, CHIEF FINANCIAL OFFICER**
- **KAY GOSS, ASSOCIATE DIRECTOR, PREPAREDNESS, TRAINING AND EXERCISES**
- **GEORGE OPFER, INSPECTOR GENERAL**
- **ELAINE A. MC REYNOLDS, ADMINISTRATOR, FEDERAL INSURANCE ADMINISTRATION**

### OPENING STATEMENT OF HON. CHRISTOPHER S. BOND

Senator BOND. The hearing before the Subcommittee on VA, HUD and Independent Agencies will come to order.

I welcome Senator Campbell and Mr. Witt. We are delighted to have you all here today. My apologies for running late. As you might have guessed, traffic delayed me and it delayed my ranking member, Senator Mikulski, who has asked that we go ahead.

The subcommittee meets today to review the budget request of the Federal Emergency Management Agency for fiscal year 1997, and, Mr. Witt, we welcome you. In the past, the Agency was often called a turkey farm for political hacks, and other names which have been used for FEMA which I would not repeat in polite company. But clearly I think you, Mr. Witt, deserve a great deal of credit for turning the Agency into a professional, capable, and highly respected Federal instrument. Disaster response is no longer a disaster, but a point of pride for the Federal Government.

FEMA today is requesting an appropriation of $792 million, including $320 million for disaster relief, $100 million for the emergency food and shelter program, and $372 million for operating programs. Excluding disaster relief, FEMA's request represents a reduction below the 1996 level of about $7 million. While FEMA's budget request is modest, FEMA has significant budgetary issues associated with programs outside of the regular discretionary spending caps.

As we all know, FEMA currently has available about $5.5 billion in disaster relief funds from prior year appropriations. A substantial amount of these funds will not be obligated in fiscal year 1996 and will carry into fiscal year 1997. Given the magnitude of available disaster relief funds, FEMA's responsibility for sound financial management and stewardship of the dollars is extremely important.

This subcommittee and I personally am very much concerned about the impact of the $1 billion-plus rescission which offset additional spending in the omnibus appropriation bill. I was absolutely outraged about this rescission when it was suggested by the President's Chief of Staff Leon Panetta. I, my ranking member, and my colleagues in the House registered our strong objections. Despite our objections, the leadership chose to go along with the White House in approving this rescission.

It is extremely shortsighted, and I think one that potentially causes a great deal of problems. Most of these funds are targeted for California, and if we are unable to replenish those funds, California and other States hit by disasters will suffer delays in receiving needed assistance. And I cannot understand why responsible action by this subcommittee and our colleagues in the House has resulted in making us the target for the raid.

We asked that they look elsewhere for offsets, but they focused on the disaster relief fund. As a result of the rescission, FEMA will need yet another supplemental to restore the funds and meet the disaster response requirements. The question is not whether but when such a supplement will be needed.

Frankly, what this rescission has done is to reward fiscal responsibility with a raid. We made some very tough choices, because we had to cut other agencies within our budget, to provide the $6.55 billion supplemental for FEMA in last year's supplemental. If FEMA funds are to be offered up as an offset for programs outside of FEMA and outside of this subcommittee, I have real concern as to whether we are going to make cuts in these agencies again.

Frankly, we cannot expect HUD and the other agencies to continue to bear the brunt for this irresponsibility. We purposely created a large disaster relief fund 1 year ago to provide for all of the known and projected requirements. We were well aware that the money would not spend down the first year, but we recognized that providing additional annual emergency appropriations as bills came due was not prudent management practice. The subcommittee has many, many other concerns relative to the disaster relief fund, however.

The inspector general has identified serious management problems with FEMA's implementation of the new financial management system. The inspector general has found that the data being used and entered into the system is not reliable, resulting in a garbage-in/garbage-out situation. We discussed this yesterday. The inspector general indicated that they still had the same concerns about the reliability of the basic data.

The GAO has found significant shortcomings with FEMA's lack of a clear criteria for determining project eligibility for the disaster relief fund, resulting in inconsistent and sometimes expensive decisions by FEMA officials. GAO reports that FEMA regional officials admitted that:

> Decisions made in determining eligibility following one disaster are not systematically codified or disseminated to FEMA personnel to serve as a precedent in subsequent disasters. The regulations were intended to be supplemented with guidance, examples and training to clarify eligibility criteria and help assure their consistent application. Because of competing workload, this did not occur as envisioned.

And I know we have discussed this, and the Agency is, I believe, considering, if not actually implementing, measures to change this. But we note with a great deal of concern that this has to be dealt with.

Both the GAO and the inspector general have raised questions with respect to FEMA's practice of providing disaster relief funds to private nonprofits that do not appear to provide essential Government services, such as dance companies and theaters. There are also questions as to whether FEMA's practice of charging certain activities not directly associated with a particular disaster to the disaster relief fund is appropriate, and the enormous potential for abuse as the rest of the Agency is being squeezed financially.

FEMA's disaster relief role seems to be forever expanding, and the cost to the disaster relief fund, and the taxpayer, therefore, is also ballooning. The fact that FEMA's role is to provide aid when State and local capabilities are exceeded seems to have been forgotten. As an example of FEMA's everexpanding role, I cite what occurred this past winter, after the so-called blizzard of 1996. Last fall, I understand that FEMA had worked on a draft of something called a no-dough-for-snow policy. Yet FEMA quickly abandoned the policy after the blizzard, declaring 12 States and the District of Columbia major disasters, and awarding millions of dollars for snow removal and related activities.

Between 1979 and 1993, there were no declarations made as a result of snow or blizzards. I do recall having some snowstorms during those times. One might assume the January declarations were a result of election-year politics, not a real need where State and local capacities were surpassed.

In addition, the President appointed FEMA to head up a task force on the District's snow removal problems. Now that one puzzled me, frankly. Studying the District's problems should be a role for the Federal Emergency Management Agency? I do not think so.

Both the inspector general and the GAO have offered many recommendations for limiting and controlling disaster relief expenditures. But FEMA has dragged its heels and has not yet been able to adopt those. We would like to know why FEMA is not moving more aggressively to implement these recommendations and install additional controls on the funds.

Another major financial problem FEMA is facing is in the Flood Insurance Fund. And this one is of particular concern to me, in a State where floods have hit recently and may be hitting again. There are serious and unprecedented shortfalls in the Flood Insurance Fund. I understand, since last fall, FEMA has borrowed more than $600 million to replenish the fund. To put this in perspective, during the great Midwest floods of 1993, FEMA borrowed only $11 million. I am concerned about when the funds will be repaid, whether there is any chance FEMA will bump up against the borrowing limit of $1 billion, and, of course, the solvency of the fund.

We have many questions as to how we should react to this solvency problem. Should subsidized premiums be raised more than 10 percent? Is FEMA's marketing effort going far enough? Are lenders complying with flood insurance purchase requirements? There are many other issues we hope to address today, such as FEMA's progress in implementing performance partnership agreements with the States.

In addition, I would like to submit for the record the testimony of GAO, which recently completed a draft of a report on disaster assistance which we requested last year, entitled "Disaster Assistance: Improvements Needed in Determining Eligibility for Public Assistance." GAO has compiled testimony based on that draft report for today's hearing, and it will be inserted in the record.

[The information follows:]

## DISASTER ASSISTANCE

### IMPROVEMENTS NEEDED IN DETERMINING ELIGIBILITY FOR PUBLIC ASSISTANCE

Mr. Chairman and Members of the Subcommittee: We appreciate the opportunity to provide this statement for the record, which discusses our recent review of the Federal Emergency Management Agency's (FEMA) public assistance program. We plan to issue our final report on this work in May. Our statement today will focus on (1) FEMA's criteria for determining eligibility for public assistance, (2) the means by which FEMA ensures that public assistance funds are expended only for eligible items, and (3) changes in eligibility that could lower the costs of public assistance in the future.

In summary, we found the following:

—FEMA's criteria for determining the extent of permanent restoration for public facilities and for determining the eligibility of certain private nonprofit facilities are ambiguous. Also, FEMA has not systematically updated or disseminated to regional officials policy changes affecting eligibility. Clear and up-to-date criteria are needed because eligibility decisions effectively determine the level of federal spending for public assistance. Further, in large disasters FEMA often uses temporary personnel with limited training to help prepare and process damage survey reports, which are used in determining eligibility. Without clear and up-to-date criteria, inconsistent or inequitable eligibility determinations and time-consuming appeals may be more likely to occur.

—FEMA relies on states (the grantees for all public assistance grants) to ensure that expenditures are limited to eligible items. FEMA approves specific subgrantee projects (subgrantees are state and local government agencies, nonprofit organizations, and other recipients) before obligating funds, and also reviews project modifications and/or cost overruns. The states certify to FEMA at the completion of each subgrantee's project and the closeout of each disaster that all disbursements of public assistance grants have been in accordance with approved damage survey reports. Additional controls over disbursements include audits of some subgrantees by (1) independent auditors pursuant to the Single Audit Act of 1984[1] and (2) FEMA's Office of Inspector General, with possible augmentation by state audit agencies.

—Public assistance program officials in FEMA's 10 regional offices identified a variety of options that, if implemented, could reduce the costs of the public assistance program. Among the options recommended most strongly were placing limits on the appeals process; eliminating eligibility for some facilities that generate revenue, lack required insurance, or are not delivering government services; and limiting the impact of building codes and standards applicable to permanent restoration. Implementing these options might require amending disaster assistance legislation and/or FEMA's regulations.

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[1] The Single Audit Act generally requires that entities receiving over $25,000 annually in federal grant funds have an independent audit.

## BACKGROUND ON THE PUBLIC ASSISTANCE PROGRAM

When disasters such as floods, tornadoes, or earthquakes strike, state and local governments are called upon to help citizens cope. Assistance from FEMA may be provided if the President, at a state governor's request, declares that an emergency or disaster exists and that federal resources are required to supplement state and local resources. The 1988 Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 and following) authorizes the President to issue major disaster or emergency declarations and specifies the types of assistance the President may authorize. The assistance includes temporary housing and other benefits for individuals as well as public assistance.

The public assistance program funds the repair of eligible public facilities—such as roads, government buildings, utilities, and hospitals—that are damaged in natural disasters. Under the program, FEMA has obligated over $6.5 billion for disasters that occurred during fiscal years 1989 through 1994. FEMA may make public assistance grants to state and local governments and certain nonprofit organizations for three general purposes: debris removal, emergency protective measures,[2] and permanent restoration. Generally, the grants are to cover not less than 75 percent of the eligible costs.

Over the years, the Congress has increased eligibility for public assistance through legislation that expanded the categories of assistance and/or specified the persons or organizations eligible to receive the assistance. FEMA is responsible for developing regulations and guidance to implement the program.

Following a disaster declaration, FEMA helps survey damaged facilities and prepares damage survey reports (DSR's) that contain estimates of repair costs. Officials in FEMA's regional offices make the initial eligibility determinations. The applicants may appeal these decisions, first to the regional office and subsequently to FEMA headquarters.

## CLEARER CRITERIA ARE NEEDED TO DETERMINE ELIGIBILITY

For disasters declared in fiscal years 1989 through 1994, FEMA projects that public assistance grants for permanent repairs and restorations will total over $5.2 billion. Decisions on eligibility effectively determine the level of federal spending for public assistance, affecting the amounts of grants and of FEMA's and applicants' administrative costs. The importance of clear criteria is heightened because in large disasters FEMA often uses temporary personnel with limited training to help prepare and process applications.

### *Criteria for determining extent of permanent restoration are unclear*

Our review of FEMA regulations and implementing guidance, and discussions with FEMA officials responsible for making eligibility determinations, revealed a need for clarifying the criteria related to the standards (building codes) to which damaged facilities should be restored. Generally, FEMA's regulations provide that the agency will provide funding to restore an eligible facility on the basis of its design as it existed immediately before the disaster and in accordance with applicable standards. For a number of reasons, determining what standards are "applicable" can be contentious. For example, following the January 1994 Northridge (California) earthquake, a decision on assistance for restoring damaged hospitals was delayed for 2 years because of a dispute over which standards were applicable.

To be considered "applicable," the standards must—among other things—be in a formally adopted written ordinance of the jurisdiction in which the facility is located or be state or federal requirements. The standards do not necessarily have to be in effect at the time of the disaster; if new standards are adopted before FEMA has approved the DSR for the permanent restoration of a facility in the jurisdiction, the work done to meet these standards may be eligible for public assistance. FEMA regional officials cited a need to better define the authority for adopting and approving standards.

### *Criteria for eligibility of private nonprofit facilities are unclear*

Similarly, the criteria for determining the eligibility of certain private nonprofit facilities are unclear. The Stafford Act provides that, in addition to specific types of private nonprofit facilities such as educational institutions and medical facilities, "other" private nonprofit facilities that "provide essential services of a governmental nature to the general public" may be eligible for assistance. When developing regulations to implement the legislation, FEMA relied on an accompanying report[3] to define the "other" category. The report's examples included museums, zoos, community centers, libraries, shelters for the homeless, senior citizens' centers, rehabilitation facilities, and shelter workshops. FEMA's regulations incorporated the list of examples from the House report but recognized that other similar facilities could be included.

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[2] Emergency protective measures are activities undertaken to save lives and protect public health and safety; examples include search and rescue operations, security measures, and the demolition and removal of damaged structures.

FEMA experienced problems in applying this regulation because, among other things, the wide range of services provided by state and local governments made it difficult to determine whether services were of a governmental nature. In 1993, FEMA amended its regulations to limit eligible "other" private nonprofit facilities to those specifically included in the House report and those facilities whose primary purpose is the provision of health and safety services. However, FEMA officials have still found it difficult to determine whether facilities are eligible. FEMA's Inspector General has cited examples of private nonprofits that do not appear to provide essential government services yet received public assistance funding. For example, following the Northridge earthquake, a small performing arts theater received about $1.5 million to repair earthquake damage because it offered discount tickets to senior citizens and provided acting workshops for youth and seniors.

### *Clear criteria are important for controlling costs and other reasons*

Clear criteria are important for controlling federal costs and helping to ensure consistent and equitable eligibility determinations. For example, depending on which set of standards—which determine the scope of work needed for permanent restoration—were deemed "applicable," FEMA's costs of restoring one of the hospitals damaged in the Northridge earthquake ranged from $3.9 million to $64 million. (The latter estimate is based on the cost of demolishing and replacing the hospital.)

Additionally, without clear criteria, inconsistent or inequitable eligibility determinations and time-consuming appeals by grantees and subgrantees may be more likely to occur. According to FEMA officials, between fiscal year 1990 and the end of fiscal year 1995, there were 882 first-level appeals of public assistance eligibility determinations. FEMA headquarters had begun logging in second- and third-level appeals in January 1993 and could not quantify the number of such appeals that occurred before then; but from January 1993 to the end of March 1996, there have been 104 second-level appeals and 30 third-level appeals. Although FEMA may always expect some appeals, clearer guidance on applying eligibility criteria could help reduce their number.

The need for clearer, more definitive criteria dealing with the eligibility for public assistance takes on added importance because of FEMA's use of temporary personnel with limited training to help prepare and process DSR's, which are used in determining the scope of work eligible for funding. The number of large disasters during the 1990's has resulted in a great number of DSR's; for example, over 17,000 after the Northridge earthquake and over 48,000 after the 1993 Midwest floods. FEMA regional officials working on the recovery from the Northridge earthquake pointed out that the lack of training directly results in poor quality DSR's that may cause overpayments or underpayments to public assistance recipients.

### *Officials recognize need for clearer criteria systematically disseminated*

According to FEMA regional officials, decisions made in determining eligibility following one disaster have not been systematically codified or disseminated to FEMA personnel to serve as a precedent in subsequent disasters. The regulations were intended to be supplemented with guidance, examples, and training to clarify eligibility criteria and help ensure their consistent application, but because of competing workload, this did not occur as envisioned. FEMA's written guidance supplementing the regulations include a manual published in draft in 1992 and policy memorandums.

FEMA and other officials recognize the need to clarify the criteria and improve policy dissemination. At a January 1996 hearing,[4] the Director of FEMA noted that in previous disasters FEMA staff worked without having policies in place that addressed public assistance, making eligibility determinations difficult. FEMA plans to republish and subsequently update the public assistance manual and has begun offering a new training course for officials who prepare DSR's.

Also, FEMA has recently taken steps to improve policy dissemination. Examples include (1) a compendium of policy material compiled by one FEMA regional office, which FEMA headquarters is circulating to the other regions; (2) the development of a new system of disseminating policy memorandums, including a standardized format and numbering system; and (3) the dissemination—by headquarters to all regional offices—of the results of second- and third-level appeals.

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[3] House Report No. 100–517.

[4] Hearings before the Subcommittee on Government Management, Information, and Oversight, House Committee on Government Reform and Oversight, Northridge, California, Jan. 19, 1996.

## FEMA RELIES LARGELY ON STATES TO ENSURE ELIGIBILITY OF EXPENDITURES

To ensure that expenditures are limited to eligible items, FEMA relies largely on states' (grantees') certifications. Further limited assurance is provided by audits.

### *States certify that disbursements are appropriate*

When FEMA approves a DSR, it obligates an amount equal to the estimated federal share of the project's cost. The obligation makes these funds available to the state to draw upon as needed by the subgrantees. If a subgrantee wishes to modify a project after a DSR is approved, or experiences cost overruns, it must apply through the state to FEMA for an amended or new DSR. This gives FEMA the opportunity to review supporting documentation justifying the modification and/or cost overrun.

In accordance with a governmentwide effort launched in 1988 to simplify federal grant administration, FEMA relies on states—in their role as grantees—to ensure that expenditures are limited to eligible items. The states are responsible for disbursements to subgrantees and certify at the completion of each subgrantee's project and the closeout of each disaster that all disbursements have been proper and eligible under the approved DSR's. FEMA does not specify what actions the states should take to enable them to make the certifications, but provides that inspections and audits can be used. FEMA has no reporting requirements for subgrantees but expects grantees to impose reporting requirements on subgrantees so that the grantees can submit necessary reports.

Most disasters stay open for several years before reaching the closeout stage. FEMA officials involved in the closeout process in the San Francisco, Atlanta, and Boston regions told us that they review the states' closeout paperwork to verify the accuracy of the reported costs, but they rely on the states to ensure the eligibility of costs.

### *Audits provide some additional assurance*

Independent audits serve as a further check on the eligibility of items funded by public assistance grants, although the audit coverage is somewhat limited. FEMA's Office of Inspector General (OIG) audits recipients on a selective basis and attempts to audit any disaster when asked to by a FEMA regional office. Officials in the OIG's Eastern District Office could not estimate their audit coverage but said that a significant percentage of the dollars were audited by focusing on where the large sums of money went. For example, although the officials had looked at only about 20 of the several hundred public assistance subgrantees for Hurricane Hugo, they believed that those subgrantees represented about $200 million of the $240 million in public assistance costs. Officials in the Western District Office said that less than 10 percent of the disasters receive some sort of audit coverage by the OIG. Overall, they believe that probably less than one percent of DSR's are covered.

States may also perform audits of specific subgrantees. Currently, California is the only state that has an arrangement with FEMA's OIG to perform audits that meet generally accepted auditing standards. (Audit coverage in California is particularly important because in recent years California has received far more public assistance funds than any other state.) OIG officials said that they have attempted to negotiate for similar audit coverage by other states, but none have agreed to provide it so, generally citing the difficulty of hiring and paying for the audit staff and keeping a sustained audit effort under way in light of the sporadic nature of FEMA's disaster assistance.

FEMA may obtain additional assurances about the use of its funds from audits of subgrantees conducted as part of the "single audit" process.[5] State and local governments and nonprofit organizations that receive $100,000 or more of federal funds in a year must have a "single audit"[6] that includes an audit of their financial statements and additional testing of their federal programs. Auditors conducting single audits must test the internal controls and compliance with laws and regulations for programs that meet specified dollar criteria The largest programs, in terms of expenditures, are therefore tested. Entities that receive $25,000 to $100,000 in federal assistance in a year have the option of having a single audit or an audit in accordance with the requirements of each program that they administer.

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[5] State and local governments are subject to the Single Audit Act of 1984 and its implementing guidance, OMB Circular A–128, "Audits of State and Local Governments." Nonprofit entities are administratively subject to the single audit process under OMB Circular A–133, "Audits of Institutions of Higher Education and Other Nonprofit Organizations."

[6] Nonprofit organizations that operate only one federal program may elect to have an audit of that program.

## CHANGES TO ELIGIBILITY CRITERIA CITED BY DISASTER MANAGEMENT OFFICIALS

Because the public assistance officials in FEMA's 10 regional offices are involved in the day-to-day operations of the public assistance program, giving them a high degree of expertise, we obtained their recommendations for reducing the costs of future public assistance. We also asked the officials to identify potential obstacles to implementing those recommendations. We asked the National Emergency Management Association, which represents state emergency management officials, to respond to the options that the FEMA officials generated because implementing many of the options would affect the states. Because the available records did not permit quantifying the impact of each option on past public assistance expenditures, and because future costs will be driven in part by the number and scope of declared disasters, the impact on the costs of future disasters is uncertain.

Options that (1) the FEMA regional officials strongly recommended and (2) the National Emergency Management Association endorsed for further consideration are:

—Better define which local authorities govern the standards applicable to the permanent restoration of damaged facilities.

—Limit the time period following a disaster during which those authorities can establish new standards applicable to the restoration.

—Eliminate the eligibility of facilities that are owned by redevelopment agencies and are awaiting investment by a public-private partnership.

—Restrict the eligibility of public facilities to those being actively used for public purposes at the time of the disaster.

—Reduce the number of times that recipients may appeal a FEMA decision on eligibility of work.

—Improve insurance requirements by (1) eliminating states' current authority to waive mandatory purchase of property insurance otherwise required as a condition of FEMA's financial assistance and (2) requiring applicants to obtain at least partial insurance, if it is reasonably available.

Additional options strongly recommended by the FEMA officials but not specifically endorsed for further consideration by the National Emergency Management Association include the following:

—Limit funding for facilities used to temporarily relocate subgrantees during appeals, because the appeals process can take several years. This option would be comparable to the insurance industry's practice of calculating maximum allowable temporary relocation costs.

—Eliminate the eligibility of revenue-generating private nonprofit organizations.

—Eliminate funding from FEMA for some water control projects.

—Limit funding for permanent restoration to the eligible cost of upgrading only the parts of structures damaged by the disaster. (Applicants would bear the expense of upgrading undamaged parts of the structures.)

—Eliminate the eligibility of publicly owned facilities that are being rented out to generate income. For example, facilities owned by local governments and rented to the private sector for use as warehouses, restaurants, stadiums, etc., would not be eligible.

—Eliminate or reduce the eligibility of facilities when the lack of reasonable predisaster maintenance contributes to the scope of the damage from a disaster.

—Eliminate the eligibility of the credit toward the local share of the costs of public assistance for volunteer labor and donated equipment and material.

—Increase the percentage of damage required for FEMA to replace a structure (rather than repair it) to a threshold higher than the current 50 percent.

The National Emergency Management Association proposed that considerable savings in the federal costs of public assistance could be realized by reducing the federal administrative structures. The association also endorsed for further consideration the following options, identified but not most strongly recommended by FEMA respondents:

—Eliminate the eligibility of postdisaster "beach renourishment," such as pumping sand from the ocean to reinforce the beach.

—Limit the scope of emergency work to the legislative intent. (The association believes that assistance for debris removal and emergency protective measures has been used for permanent repairs.)

—Eliminate the eligibility of revenue-producing recreational facilities, e.g., golf courses and swimming pools.

### CONCLUSIONS

Clearer and more comprehensive criteria (supplemented with specific examples) that are systematically disseminated could help ensure that eligibility determinations are consistent and equitable and could help control the costs of future public assistance. To the extent that the criteria are more restrictive, the costs of public assistance in the future could be less than they would otherwise be. In the 1990's, the potential adverse effects of a lack of clear criteria have become more significant because of (1) an increase in large, severe disasters and (2) the need to use temporary employees with limited training in the process of inspecting damage and preparing damage survey reports.

A number of FEMA public assistance officials' recommendations are consistent with options proposed by FEMA's Inspector General, with our work,[7] and with our current review. Furthermore, the options highlight a number of instances in which existing eligibility criteria need to be clarified or strengthened with additional guidance. Our May report contains recommendations designed to clarify and help ensure consistent application of the criteria and to identify changes that should be implemented.

### RELATED GAO PRODUCTS

*Natural Disaster Insurance: Federal Government's Interests Insufficiently Protected Given Its Potential Financial Exposure* (GAO/T-GGD–96–41, Dec. 5, 1995).

*Disaster Assistance: Information on Declarations for Urban and Rural Areas* (GAO/RCED–95–242, Sept. 14, 1995).

*Disaster Assistance: Information on Expenditures and Proposals to Improve Effectiveness and Reduce Future Costs* (GAO/T–95–140, Mar. 16, 1995).

*GAO Work on Disaster Assistance* (GAO/RCED–94–293R, Aug. 31, 1994).

*Los Angeles Earthquake: Opinions of Officials on Federal Impediments to Rebuilding* (GAO/RCED–94–193, June 17, 1994).

*Earthquake Recovery: Staffing and other Improvements Made Following Loma Prieta Earthquake* (GAO/RCED–92–141, July 30, 1992).

Senator BOND. As we will discuss later this morning, GAO found that FEMA's criteria for determining the extent of permanent restoration for public facilities and for determining the eligibility of private nonprofit facilities are ambiguous. FEMA has not systematically updated or disseminated to regional officials policy changes affecting eligibility.

GAO identified several options which could reduce the cost of the Disaster Relief Public Assistance Program, such as placing limits on the appeals process and limiting the impact of building codes and standards applicable to permanent restoration. I expect FEMA to review carefully these recommendations and report back on the agency's plans for implementation, including any necessary legislative changes that must be made to the Stafford Act.

### PREPARED STATEMENT

We will make this part of the record. I know that you are familiar with it, and we will ask for your attention to it.

[The statement follows:]

### PREPARED STATEMENT OF MARK O. HATFIELD

Mr. Chairman: This morning the Senate Appropriations Subcommittee on VA, HUD, and Independent Agencies will hear testimony regarding the Federal Emergency Management Agency's fiscal year 1997 budget request. This is a very important matter and I look forward to a productive discussion of the funding needs for this agency. However, I would like to take a moment to briefly speak about recent FEMA activities in the Pacific Northwest.

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[7] For example, *Earthquake Recovery: Staffing and Other Improvements Following the Loma Prieta Earthquake* (GAO/RCED–92–141, July 30, 1992) and *Los Angeles Earthquake: Opinions of Officials on Federal Impediments to Rebuilding* (GAO/RCED–94–193, June 17, 1994).

During the last year, FEMA has had to respond to a number of disaster declaration sites across the country. The devastating flood of 1996 in Oregon is a prime example of a natural disaster requiring FEMA's expertise. This situation has made all of us in the Pacific Northwest keenly aware of FEMA's readiness and ability to act quickly. Additionally, FEMA personnel have been very caring and have done their utmost to address the human needs of Oregon's flood victims.

Mr. Chairman, a significant amount of work remains to be completed before the Pacific Northwest can recover from the damages inflicted by the recent flooding. However, the people of Oregon have exhibited a unique and courageous spirit in confronting this challenge. The assistance of federal agencies, such as FEMA, have greatly contributed to this monumental endeavor. I wish to commend the Federal Emergency Management Agency for their commitment and compassion in helping individuals rebuild their communities.

Senator BOND. I am pleased that my distinguished ranking member has now overcome the traffic problems and has joined us.

Senator Mikulski.

## STATEMENT OF BARBARA A. MIKULSKI

Senator MIKULSKI. Thank you very much, Mr. Chairman. I apologize for not being here. I was on the beltway and I was on the beltway.

Senator BOND. Is that a country music song?

Senator MIKULSKI. Yes. [Laughter.]

Senator BOND. I thought so. It is one of my favorites.

Senator MIKULSKI. That is right.

Mr. Chairman, I have a statement that I would like to ask unanimous consent that it go into the record.

Senator BOND. It will be so.

Senator MIKULSKI. I want to thank Director Witt for being here today and again for the significant steps he has taken to improve and professionalize and streamline the agency, and to implement administratively many of the recommendations made by the National Academy of Public Administrators. I also want to thank him for his prompt response to the Maryland disasters that we faced there. We had a white hurricane and a blizzard, but the flooding after that was just horrendous. And thanks to the work of FEMA and the preparedness of Maryland emergency management, we were able to save lives and save communities and get people back to work. So we want to thank you for that.

I will have other questions, but I do want to state, Mr. Chairman, I am deeply concerned about, first of all, the fact that now, every time there is a disaster, they are taking it—we do not have a permanent way of funding disasters. And when we did the supplemental last spring, remember, we took it out of our subcommittee and primarily HUD. Now maybe HUD needed to be cut, but we could have also recycled that into other areas. So this is an issue that, in some ways, I believe we need to grapple with it.

And now, once again, we had to take that $1 billion reduction in FEMA's ability to meet disaster relief requirements in fiscal year 1997. I understand there is a discussion of a supplemental for fiscal year 1997 even before it is over. So we know those issues, and rather than in a speech here, get into the questions and answers with you. Because I do not want disaster relief to be a disaster for FEMA or for the American people that we need to serve.

## PREPARED STATEMENT

So, having said that, I am looking forward to just hearing Mr. Witt's testimony.

[The statement follows:]

### PREPARED STATEMENT OF BARBARA A. MIKULSKI

Mr. Chairman, thank you for holding this hearing on FEMA's budget request for fiscal year 1997.

Thank you, Director Witt, for being here today. And thanks for your hard work in responding so quickly and decisively to the damage caused by the devastating winter floods in my State of Maryland and other states in the mid-Atlantic area.

I thank you, and the citizens of Maryland thank you—and all FEMA employees—for your support through the difficult winter storms.

Congratulations are in order as well, for being named a member of the President's Cabinet. This is an honor that you and the hardworking employees of FEMA have earned.

And thanks also for your work, Director Witt, to put in place the necessary administrative changes to turn this agency around. I am proud, as I am sure you are, of the changes you have implemented at the agency since your arrival—changes to take FEMA out the Cold War, bunker mentality and to restructure the agency to make disaster response the primary emphasis.

You have also worked to professionalize the agency, and to increase the emphasis on disaster preparation and planning.

These are all changes that I endorsed in FEMA reform legislation introduced in 1993. That legislation was based on the recommendations made in a National Academy of Public Administration (NAPA) study that I commissioned as Chairman of this Subcommittee. I am pleased with the efforts you have made to implement many of those recommendations administratively.

I know about FEMA's reforms firsthand, as do the residents of Maryland impacted by the January floods.

Now that we have worked to turn the agency around, we need to begin an effort to turn the way we budget for this agency around.

While no one is more pleased than this Senator that we now have in place a final fiscal year 1996 appropriations bill for FEMA and the rest of the Federal government, I am disappointed that FEMA had to sacrifice $1 billion from the disaster relief fund in order to reach a final agreement on that omnibus spending bill.

Last year, FEMA received a $6.7 billion supplemental appropriation for the disaster relief fund. That amount was based on actual, identified requirements for disaster funding. The entire $6.7 billion was offset by rescissions from other programs in the VA-HUD Subcommittee's jurisdiction.

I opposed taking those offsets then, and I oppose using FEMA's disaster relief fund as a slush fund now.

I am concerned about the impact of the $1 billion reduction on FEMA's ability to meet disaster relief requirements in fiscal year 1997. I understand that there are already discussions of a possible supplemental for Disaster Relief before the end of fiscal year 1997.

I know that Chairman Bond shares my concerns about the cut in the disaster relief fund, and I am sure that we will have an opportunity to discuss the impact of this rescission as the hearing continues.

I believe that national disaster relief is a national responsibility, and requires a shared national sacrifice. I believe that the Federal government has to come up with a better way to plan for disaster funding.

I look forward to your leadership, Mr. Director, within the Administration, in finding a solution to this problem. And I look forward to working with my Subcommittee Chairman to ensure that this situation is not repeated in the coming year.

Finally, I want to compliment you, Director Witt, on FEMA's budget request for fiscal year 1997—which reflects a decrease of $7 million in operating expenses below the current fiscal year. FEMA is truly an example of an agency that has been able to do more with less, and I know that your leadership is the primary reason for that.

Thank you again, Director Witt, for all that you have done to make FEMA what it is today. I look forward to hearing your testimony.

## PREPARED STATEMENT

Senator BOND. Thank you very much, Senator Mikulski. I expressed my minimum lack of high enthusiasm for that process myself prior to your arrival. Your statement will be made a part of the record. And, Mr. Witt, if you would proceed, please. We do have a statement, I guess, from Senator Campbell, who is with us and unable to stay. We appreciate his being here earlier this morning. And that also will be part of the record.

[The statement follows:]

### PREPARED STATEMENT OF SENATOR BEN NIGHTHORSE CAMPBELL

Mr. Chairman, I would like to join my colleagues in welcoming the officials of FEMA and thank all of you for taking the time to come before this committee today and present your fiscal year 1997 budget request.

Everyone recognizes the important job FEMA has been called on to perform during disasters, Oklahoma City being one recent example that comes to mind. Although we would rather not have to face a large disaster that requires us to call on FEMA for help, I think as elected officials we all understand the critical and unique role FEMA plays in helping those struck by disaster. When dealing with these types of situations, it is difficult to place a dollar figure on the importance of the work that FEMA performs.

However, I think everyone recognizes the need to balance the budget and act more fiscally responsible. In looking over your 1997 budget request, I notice a $6.1 million decrease in FEMA's overall budget and the move to privatize the Open Learning Fire Service and the Fire Executive Fellowship programs. In addition, I noticed the agency's statement on its continued work to increase program efficiency and reduce duplication of effort, while eliminating any non-essential programs.

I'd like to thank FEMA, which has responded to our fiscal constraints by doing its part to balance the budget. You have submitted a budget that indicates acknowledgement of these constraints. I'd also like to stress that even though we've made some progress, there is still work to do. I look forward to working with you to achieve a balanced budget, while providing the nation with a strong disaster assistance program.

I thank the Chair.

## STATEMENT OF JAMES L. WITT

Senator BOND. Mr. Witt.

Mr. WITT. Thank you, Mr. Chairman, Senator Mikulski.

Gary Johnson, our Chief Financial Officer, is here with me, and also the Associate Directors are here as well, behind me, to answer any questions that you may have of them.

I recognize what you are saying, Mr. Chairman and Senator Mikulski, and I want to summarize my oral statement.

Senator BOND. Please do. Your full statement will be made a part of the record as usual.

Mr. WITT. OK.

Senator BOND. We fully recognize, in making our statements, we realize that FEMA did not offer up the $1 billion for rescission.

Mr. WITT. Thank you, Senator.

Senator BOND. Let the record be clear, this was not FEMA's idea. And there was no implication that you in any way were responsible for that.

Senator MIKULSKI. It takes the phrase, "I gave at the office," to a new level.

Senator BOND. Yes; higher pay grades.

Please continue.

Mr. WITT. We have made tremendous strides. And I am very, very proud of the FEMA employees and what they have accomplished and what we have been able to do, but we still have a long way to go. We all totally agree with a lot of the GAO report and the inspector general's report, and there are changes that we are making now. There are changes that we will be making as we go forward.

We also are working on a very limited snow policy that we will have ready by October 1. We are also working on disaster criteria that we will have ready by October 1. All of us know that that needs to be done. We are also working in many areas to cut disaster costs. We have streamlined the Agency, so that people can be helped much faster.

Senator Mikulski had a chance to look at our Disaster Recovery Center, which is a one-stop shop of all Federal and State agencies and voluntary agencies working together. And what does that do for us? That streamlines the process. It helps people to come into one place and be able to identify the assistance that is available to them. We use the 1–800 teleregistration system, which makes it much more effective and efficient, and we have saved millions of dollars by doing this. But we know that the accountability needs to be there. We know how important that is.

This past year, I established a Disaster Resources Board, which reviews all the nonspecific disaster costs. Because there was nothing in place to really identify nonspecific disaster costs that were supporting the disaster response recovery efforts, which is critical for you to know and for us to be accountable for. We also identified this year, for the first time ever in the budget, those nonspecific disaster costs. But with the budget going down each year and our number of workers going down each year, we have to be thinking about where we are going to be next year and the year after. We have to improve our processing for more efficiency and more accountability. That is what we are trying to do.

Last year, I moved the disaster relief fund under the CFO, which had never been done, so we can get more accountability. While we have made a lot of strides forward, we are still not where we should be, but I think we can get there. I have had roundtable meetings with CEO's of the 30 major insurance companies. I have also had a roundtable meeting with consumer groups, bankers, mortgage lending institutions, home builders associations, and the real estate industry, and I have got two more roundtables to do. We have discussed what we can do, together with industry, to cut costs and provide insurance for the consumers out there.

And I think some good nonlegislative things are going to come from this, working with private industry and consumer groups. Hopefully, by the end of May, we will be able to come forward with what we are doing there.

So we have made some tremendous strides, and I am very proud of what we have accomplished. But I realize also that we have a lot to do to be more accountable for our taxpayers' dollars.

## PREPARED STATEMENT

I will be happy to answer any questions you have, Mr. Chairman.
[The statement follows:]

## PREPARED STATEMENT OF JAMES L. WITT

Good morning Mr. Chairman and members of the committee.

I am pleased to appear before you today to discuss FEMA's 1997 budget and to discuss some of the policy issues we are currently dealing with. I especially want to share with you some of the significant changes we are making to improve delivery of services to our customers.

This subcommittee has taken a real interest in FEMA. Mr. Chairman, your support, and the support of the committee members, has meant a lot for the morale of our employees at FEMA and your actions in working on our supplemental and our appropriations have given us the resources to do our job.

On behalf of the President and all of us at FEMA, I want to thank you for that support.

I think the President's support for FEMA is clear. Since I last came before you we have been elevated to Cabinet status. And this recognition of FEMA acknowledges how critical emergency management is to the people we serve.

And his recognition honors everyone at FEMA. I'm grateful for that.

It was about a year ago today that I presented FEMA's budget to you for 1996. Since that time we have:

—Stood together in the wreckage of Oklahoma City;

—Watched the flood waters of the Mississippi River rise once again;

—Made it through one of the busiest hurricane seasons on record, in which we viewed the awful damage of Hurricane Marilyn to the Virgin Islands and of Hurricane Opal to Florida and several other States;

—Responded to devastating flooding in Pennsylvania and Maryland and other mid-Atlantic States;

—And we have worked to assist the States of the Northwest in recovering from the worst flooding in 30 years.

All of that in one year.

In partnership with State and local governments and our partners in the voluntary sector, FEMA was up to the task. But the challenges continue.

We continue to work on major recovery efforts in California and in 38 other States and several territories which have experienced major disasters over the last two years.

This work, along with our ongoing preparedness and pre-disaster mitigation efforts have kept us busy—but this "work" represents a terrible price for Americans trying to put their lives back together.

Last year we received a large supplemental appropriation to meet the needs of people and their communities hurt by disasters. We deeply appreciate that support.

Today I am presenting a budget that helps us meets those needs while cutting our costs and making FEMA more accountable. Our budget request for appropriations for fiscal year 1997 is $792 million which is over $7 million less than the current estimate for fiscal year 1996 when the disaster relief fund is excluded.

The reduced level is reflective of the hard but necessary choices that were made about the direction of FEMA's programs in order to support President Clinton's efforts to balance the budget in seven years while continuing to invest in the American people. In order to emphasize areas that I consider critical to effective emergency management—such as mitigation—while meeting the President's targets, it was necessary to make over $20 million in cuts to fund these priorities and increased pay costs.

These choices include: phasing out programs that are no longer needed or productive; revitalizing other programs to make them more effective; and instituting service enhancements to improve program delivery.

We are working to help people more and, by learning from the past, reduce the price of our future efforts.

This budget I am presenting to you today, for the first time in the history of Federal disaster assistance, provides a detailed accounting of what it costs to respond to disasters in a rapid, efficient and effective manner.

It shows the true cost of responding in a professional way that communities and their people have rightly come to expect. It represents 3.3 percent of the estimated 1996 disaster obligations.

This budget can show how much disasters cost—and it shows the costs to FEMA of being ready to respond. It breaks down the annual cost of providing the service people need. This kind of budget information helps all of us to understand the real costs of disaster relief.

In developing our budget we recognized Congress' support of our request for resources, and also its concern with the escalating costs of disasters and what FEMA is doing to control those costs. This budget reflects this administration's commitment to a balanced budget, to reducing Government spending and to more accountability of our funds.

In order to attain that increased accountability, and to identify means to reducing costs, I established the Disaster Resources Board.

This board reviews all proposed expenditures from the disaster relief fund (DRF) which are not specific to a single disaster declaration. For example it reviews the costs of training urban search & rescue teams or the cost of warehousing FEMA equipment between disaster deployments or other costs related to supporting disaster operations. It reviews these costs against previous operations as well as proposed operational or readiness needs.

To carry out that task fairly and responsibly the board established criteria for all spending proposals to meet. Those criteria narrow all non-specific disaster funding requests to those necessary expenses which directly support disaster operations.

I also want to point out that our funding for FEMA's actual operating accounts has been on the decline over the last five years. Our current operating estimate for fiscal year 1996 is over 20 percent less than the fiscal year 1992 level.

The fiscal year 1997 request continues this trend as it is over 21 percent less than the fiscal year 1992 appropriations for our operating accounts.

The operating account figures demonstrate that we have learned how to do more with less and that many of the new processes we have brought to our operations have resulted in savings and increased accountability.

For example, I promised to improve our service to disaster customers and we have. We are doing this by bringing a technological orientation to delivering disaster assistance.

No longer do we bring in hundreds of reservists to staff application centers across a State. Now we use our 800 number, staffed at one or two sites, to take applications from across the country.

And we are now automating our processing centers. Where once there were multiple processing centers in each region to review applications for each separate disaster, we are now bringing all of our capabilities into two centers that will serve the whole Nation.

In addition, the entire application for Federal assistance can now be taken using a computer—a virtually paperless process that is more efficient and takes less time.

This improvement in service (both in time and accuracy) is not without costs. Establishing these new systems and processes accounts for a considerable amount of our increase in this area. But these are costs that are much more easily identified, costs that we can control and reduce as we gain experience.

We have also made great strides in standardizing our policies so that States and local governments and all people affected by our work can know what they can expect from FEMA.

Since I started at FEMA I said that mitigation would be the cornerstone of our work. Well, it has been * * * and it's working.

For example—in Missouri, during the spring of 1993, our cost in responding to the floods approached $280 million.

The 1995 floods are estimated to cost just over $23 million.

Now, the 1995 floods were not as bad; in impact or duration. But mitigation played a great part in reducing our costs. Our buy-out program, administered with the State, moved over 4,000 homeowners. Many of these homeowners were spared flooding the second time around simply because they were no longer in harm's way.

One of the staff with the Missouri Emergency Management Agency pointed out that: "The same areas flooded in both years. The people weren't there the second time."

I intend to continue that emphasis on mitigation. One avenue I want to explore in the coming year is the possibility of establishing a pre-disaster mitigation program.

Our current program is working well. But coupling that program with a pre-disaster program can dramatically reduce disaster costs and I intend to work hard this year to develop a program that the administration and Congress can support.

When we just sit down together to look at an issue we can see that not everything requires a law or a regulation to make it better.

That's why we are also working on non-legislative initiatives that will encourage sound mitigation policies.

Through a series of roundtables with our partners, I am bringing together representatives from the building and banking industries, from consumer groups and the insurance industry, from public works engineers and State and local leadership who are encouraged by the prospect of safer homes and communities.

They are determined to help improve codes across the country to reduce the risks to their companies, investments, homes, and the roads and bridges—the infrastructure—of their communities.

Working together, we can make a difference before disasters strike.

We continue to place great emphasis on developing greater capabilities for emergency management at the State and local level. The tool for increasing those capabilities is our performance partnership agreements (PPA). We are happy to report that these agreements are starting to take hold.

To underline the importance the administration attaches to this effort, the majority of these agreements have been signed by the President and the Governor of a respective State.

In fact, this year the amount going out through our PPA's will increase. This means more flexible resources for States.

In keeping with our commitment to mitigation within the PPA process—increased funding to the States will include additional support for hazard mitigation officers in each State and for our hurricane program.

We think this sends a good message to everyone involved that we are serious about mitigation and serious about helping the States to reduce their risks.

I believe the States are improving their capabilities daily and that will represent lower costs in the long run as States assume more responsibilities for disaster response and recovery. But beyond lower costs, increased State capabilities also mean quicker and better service for disaster victims with the most immediate needs.

State capabilities are improving in various ways. For instance, during the recent flooding disaster in West Virginia, I was pleased to learn that Governor Caperton has a rainy day fund that helped the State to contribute its share for the recovery effort. Similar funds are in place in Arkansas and Florida.

Other States are improving their own training and preparedness measures to come up with innovative approaches to special needs following a disaster. For example, Hawaii has put together (and trained) a cadre of volunteer structural engineers to help with damage assessment. Similarly, the State of Georgia has organized its own donated goods program to channel the generosity of citizens after a disaster.

As we develop a sound base at the State and local level for responding to disasters, we also have to keep looking at how we do our job.

One area we are continuing to look at is disaster criteria. We are committed to strengthening the criteria without losing the discretion we need. What's difficult about this is that disasters, by their nature, are extraordinary events and reflect differing needs.

The Stafford Act is designed to allow the President flexibility in determining when it is appropriate for the Federal Government to help.

And, as we are all aware, disasters are very political events as well. We all share a mutual desire to be responsive to people in a time of great need. All of this contributes to the difficulty of establishing "one size fits all" criteria.

As States increase their capabilities, we will be able to tighten our criteria, but we don't want a situation where the law or the regulations we have devised stop us from helping people that are in need. We know there are opportunities for improvement.

A good example is the response to this winter's blizzards.

We tried to take a proactive approach with the snow, while at the same time clearly defining the limitations of assistance—it was a matter of public health and safety. But it is not an easy call to say what constitutes a snow emergency that requires Federal assistance.

I think the States we worked with would agree.

Consistent with our existing authorities under the Stafford Act, we are developing a snow emergency program.

Like the Fire Suppression Program under the Stafford Act, this would be a program that recognizes both the unique impacts of a specific snow storm and also recognizes the primary role of State and local governments in dealing with this problem.

We will keep you informed of our work in this area and hope to have a program implemented before the end of fiscal year 1996.

Another area that needs attention is our public assistance or infrastructure assistance. We will be acting on some of the recent recommendations made by our Office of Inspector General and the General Accounting Office. Those ideas represent constructive steps we can take to accelerate our process, which will bring greater fairness and savings to the current workings of the program.

Here's one example—I want to move from a 3-appeal process to a 2-appeal process.

In that way, and in many other reviews of eligibility throughout all categories of aid, we can cut costs and improve our program and still assure that our customers interests are represented.

Along with our work in mitigation and disaster recovery another important component of FEMA is flood insurance.

This year we have launched our "Cover America" campaign. You may have seen the ads that explain two key points: Flooding can happen to almost anyone; and disaster assistance doesn't provide the help you can get from an insurance policy.

We have had an upsurge in sales, due to that campaign and other factors as well, that has resulted in a significant increase in policies.

This is important because we want to keep the public informed that an insurance policy for your structure, and its contents, is a lot better deal than an IFG grant or an SBA loan.

The greater the coverage we can achieve, the healthier the flood insurance program will be, and there will be less of a burden on the disaster program.

It is particularly important now since, due to unprecedented flooding activity, we have had to exercise our borrowing authority to support the NFIP fund. We have now borrowed just over $600 million.

That borrowing is significant—but our increase in coverage is as well. If flooding incidents drop to a more normal level, we expect that we will pay the fund back within five years.

But the increasing flood insurance coverage has important corollary benefits for FEMA and its mission.

For example, last spring when we tried to conduct our Response 95 exercise—the scenario for the exercise was flooding in Louisiana and Mississippi—well, it did flood. A lot.

But the reason I mention this is because people in Louisiana had purchased flood insurance—many of their homes were covered and disaster relief funds were not necessary. Instead of disaster funds, these homeowners were paid from the premiums paid into the national flood insurance program.

Another way of improving our response effort is to improve the capabilities of State and local emergency managers. We do that each day with the training courses of the Emergency Management Institute and the National Fire Academy.

Those courses were thrown off track a bit by the furloughs but we are currently re-scheduling those students that were affected into classes as best we can with whatever funds are available for the rest of this year.

Also thrown far off schedule this year was the Emergency Food and Shelter Program. Non-profits around the country who had depended on this supplemental help for over a dozen years have been faced, up to this point, with a two-thirds real cut of funds due to the interruptions and partial continuing resolution funding.

Our request for fiscal year 1997 for emergency food and shelter is at the conference level agreed to this year—$100 million. That amount should be honored as our commitment to the thousands of little agencies dispensing warmth, nourishment, and caring to those most in need.

This program brings those agencies together at the community level to make tough choices. We should be sure that they will be able to come together in the autumn of 1996 with their funding available to them before the hardest part of the winter.

I have also been pushing a real training effort for FEMA employees seeking to improve their technical skills.

But we have placed an even greater emphasis on customer service training. Everyone in the agency is going to take it.

Our customers are very special—they are people left vulnerable by terrible circumstances. We will continue to give them the best service possible.

There are many other parts of FEMA that we will discuss today. These are just some of our initiatives we are pursuing. Our goal is to continue to streamline, to improve our operations and our program delivery.

I pledge to continue working closely with you Mr. Chairman, and this committee, in the days ahead to build on the work we've done, on what we have accomplished.

And I say we because we couldn't have done it without the support of President Bill Clinton, our supporters in Congress, and, most of all, the employees at FEMA.

For the staff at FEMA, "people helping people" is not a slogan, but the way they live. And I'm proudest of that.

Thank you very much Mr. Chairman and Members of the Committee. I will be happy to answer any questions you might have.

## DISASTER RESCISSION

Senator BOND. Thank you very much, Mr. Witt.

I will be sure and turn on the light, because I do have lengthy questions and I want to make sure that we divide this up on a reasonable basis.

Mr. Witt, we discussed in last year's hearing the need for a rainy day fund to prevent the need for annual off-budget supplementals. As we said, the $6.55 billion that we provided in the supplemental came principally from HUD. Unfortunately, you occasionally make predictions that turn out to be correct. Over 1 year ago, I cochaired the disaster task force with Senator John Glenn, and we warned that if large balances existed in our rainy day fund, there could be a major raid on these funds. And guess what? It happened.

Do you have any idea why the administration offered these funds for rescissions? And what is the current balance in the disaster relief fund? Can you tell us, for the record, why the current unobligated balance is so large and how you expect to use it?

Mr. WITT. Mr. Chairman, first, as you said earlier, it was not my suggestion to offset the $1 billion. I know how critical those funds are to the people out there that we take care of. Our concern is, that by the summer of 1997, we will be in a position that concerns us all, with the possibility of having to ask for some more funds. With all of the disasters that we have responded to, including Northridge, a lot of those funds are going to be going out to help rebuild very soon. An earthquake takes longer, because there are so many engineering and architectural things to do and the damages are so varied, but also we have had floods, hurricanes, and the recent tornadoes in Arkansas and Illinois.

So we have a tremendous task, and we are concerned about the fund and where we are at.

Gary, do you want to give a balance figure?

Mr. JOHNSON. Mr. Chairman, you did indicate the correct current balance of $5.5 billion in your opening remarks. That is, of course, less because of the $1 billion rescission that you are referencing.

Senator BOND. Are those funds all needed? Why are we carrying those?

Mr. JOHNSON. Well, I do not think there is any question right now, Mr. Chairman, that those funds are needed. We do our projections analysis through this year and through fiscal year 1997. The committee took the position last year to try to keep the disaster relief fund current with requirements as we foresee them. We do use in our projections, and for good reason I believe, the 5-year average rate of obligations, less Northridge, because we believe Northridge was an outlier because of its size. That amounts to about $1.7 to $1.8 billion a year, in terms of requirements.

In the past couple of years, we have been exceeding that particular level, in terms of our obligation rate. In fact, this year, Mr. Chairman—it is about an average of $1.7 billion this year for requirements—we are already at a pace of about $2.1 billion. Our estimates, hopefully, in terms of our projections, will not come to pass, but we are at the whim of Mother Nature. Mother Nature has not been good to us, as you all well know, over the last couple of years.

Senator BOND. Based on disasters that have actually happened, how much of that unobligated balance do you think will have to be committed? If something happened and no more disasters occurred, how much would it cost us just to clean up the existing disasters we have?

Mr. JOHNSON. Right now, Mr. Chairman, for declarations that occurred prior to fiscal year 1996, we are showing requirements on the order of $3.4 billion that need moneys to be obligated against them. For fiscal year 1996, to date, we are showing requirements of about $685 million.

Senator BOND. So is that in addition to the $3.4 billion or is that part of it?

Mr. JOHNSON. That is in addition to it, Mr. Chairman.

Senator BOND. So it is over $4 billion?

Mr. JOHNSON. We would expect right now that should our assumption for the 5-year average materialize for the remainder of the year, we would have remaining needs on the order of about $5 billion, sir.

Senator BOND. And our fund is about $4.5 billion now with the rescission.

Mr. JOHNSON. $5.5 billion, Mr. Chairman.

### NEED FOR 1997 SUPPLEMENTAL

Senator BOND. $5.5 billion, OK.

Mr. Witt, when do you project that the balance in the fund will be depleted and a supplemental will be needed?

Mr. WITT. We are looking at the midsummer of 1997.

Senator BOND. What happens if we do not replenish it?

Mr. JOHNSON. In our current projections, Mr. Chairman, our unobligated balance on the second-to-the-last day of the fiscal year would be $137 million. Our request has language in it for $320 million to become available the last day of the fiscal year; so our unobligated balance would be $457 million.

I think the key point here, when Director Witt is talking about the midsummer, is that is the peak of hurricane season. It has been our policy, since I have been working with the Director, to maintain a balance in the fund of approximately $500 million to have available for immediate victims' needs in the event of a hurricane. So our request, making $320 million available at the end of the year, compounded with hurricane season, and the $1 billion rescission, causes us concern.

Senator BOND. So if we do not replenish the fund, any hurricanes that hit after July 1997, we will be unable to respond until a supplemental is approved; is that correct?

Mr. WITT. It would be very difficult to meet those individual needs, yes, sir.

### DISASTER ELIGIBILITY REQUIREMENTS

Senator BOND. Mr. Witt, we had mentioned controlling disaster relief costs in the GAO review. According to the draft report, applying the criteria to hospitals damaged in Northridge quake ranged from $3.9 to $64 million, depending upon various interpretations of the criteria. What are you doing and what can you do to clarify disaster relief eligibility criteria to prevent ambiguities and inconsistencies such as the GAO has identified?

Mr. WITT. We are looking at those areas where we totally agree with GAO. We are looking at the enforcement of building codes. We are looking at what we can do in the out-years to tell communities that they need to adopt codes and have them in place. Then the codes that are adopted and in place at the time of the disaster will be the ones we use to rebuild by. I think it is very important. Also, we are using mitigation as a tool to help mitigate against future losses and disasters, which, Mr. Chairman, you have seen in your State how effective that is.

So I think the GAO report, in a lot of instances, is accurate, and that we are going to have to move toward doing these things.

Senator BOND. Apparently, contractors who specialize in interpreting FEMA public assistance policy had to be employed. And the lack of clarity in the eligibility criteria has been cited by some as the reason for outstanding differences between FEMA and the State of California nearly 6 years after the Loma Prieta earthquake. When do you think you can have these criteria developed?

Mr. WITT. We are looking to try to have the criteria developed and ready by October 1.

### DISASTER APPEALS PROCESS

Senator BOND. One of the GAO recommendations was cutting back on the appeals process from three to two levels. What impact will that have, and when can you get that done?

Mr. WITT. We also hope to do that by October 1. We want to go from three appeals to two, and I think we should

### POLICY ON PRIVATE NONPROFITS

Senator BOND. The inspector general, in a July 1995 report, cited several examples of private nonprofits that do not appear to provide essential Government services, yet receive FEMA assistance, such as a performing arts theater which received $1.5 million for repairs. Why should the Federal Government be providing assistance for facilities which do not provide essential Government services? And should this policy be changed?

Mr. WITT. The policy on private nonprofits is very broad. I agree with the inspector general on this. It needs to be tightened. You have a lot of private nonprofits, such as electrical co-ops. You have a lot of nonprofit hospitals. I think, we should look at hospitals very carefully, because of the fact that they provide a critical function after a disaster. So we have to be careful with that.

But I think we should look at some of the revenue-producing nonprofit organizations. Any of the revenue-producing nonprofit organizations would be eligible under SBA up to a certain limit for whatever they are capable of repaying. If it takes more money after that limit to help, then there is a possibility we could help after that, but not for the full burden of the cost.

Senator BOND. Could not these revenue-producing nonprofits get their own insurance, for example, to cover the costs?

Mr. WITT. Absolutely. Some of the co-ops have some serious problems with debris which creates an emergency situation for putting electricity back in for life and safety. But they are generating a fee.

Senator BOND. I agree that there may be disasters, and you remove the debris from a hospital so you can get people in or the debris from—but to go back and rebuild a building that has fallen down, it would seem to me that would be a role more properly covered by insurance.

Mr. WITT. Absolutely, it should be.

Senator BOND. Senator Mikulski.

### EFFECT OF FURLOUGH ON STATE/LOCAL TRAINING

Senator MIKULSKI. Well, Mr. Chairman, you have covered a lot of the questions related to disaster response and its funding. Let me go to another dimension. First of all, because of the shutdowns, many FEMA people, actually in the height of some of their most severe disaster situations were on furlough. I think it is a real tribute to the FEMA people that they were working even though we were in the midst of a Federal shutdown. So I would like you to convey that to the people who were on the line and on the firing line.

Having said that, though, I understand that there have been very serious consequences to State and local governments, your training, to the nonprofits on emergency and food and shelter because of that, which then says, where are we this year? Let us go back now to State and local government. We often look at the money to be gotten to them—the appeals process, disaster—but, as you know, what we have been working on was a triad of readiness, response and then recovery. That was our triad. That was the three R's.

Mr. WITT. Yes.

Senator MIKULSKI. Now, the more ready, often the more rapid the response, and in some ways, the more efficient the recovery or even less mitigation. On page 16, you talk about improving response efforts, the capabilities of State and local government thrown back by furloughs, et cetera. Could you talk about where we are on the training of State and local government, and also what you mean by "thrown off a bit by the furloughs," and then, also, where we are fiscally in this year's budget to be working with the State and locals. Because that is the doctrine of first response. They will always, just like the firefighter is the responder or the emergency response team in that flood. So where are we in helping them be fit for duty? And is the money there for the training, of them to have the resources, the technology, et cetera?

Mr. WITT. Senator, first, the furlough caused some serious morale problems within the Agency itself because of the designation of who is essential and who is not essential. That was tough on the employees. Also it took us 2 months or longer to even catch up. It also shut some disaster field offices down. Also, we had States that literally had to send emergency management people home. They shut down at the State emergency operations centers as well, because they did not have the funds. We could not get the funds out there to them.

In the emergency food and shelter program, that money is so critical to these nonprofit organizations that shelter homeless people and that feed needy people during the winter months. We could not put any money out to those organizations to help; so the organizations could not take care of the people that were in such need during the winter months. Then we only got about $45 million of the total $100 million to be able to put out. So it was very difficult. They had a very rough time of that.

The States were also delayed in being able to prepare for future disasters and bring their capability up. This year we put in place the Performance Partnership Agreement, which you and I have discussed in the past, to give the States the flexibility to be able to target their programs, their training programs and their exercise programs, against the risk that they face in that State. The PPA is going to bring their capability up higher to meet that risk.

In Emmitsburg, MD, at the training center for emergency managers and firepeople, we literally had to shut down during the furlough. We had to cancel courses which affected over 2,000 people coming to Emmitsburg for training. A lot of these people had already bought airline tickets that were nonrefundable tickets that we could not reimburse. So it affected a lot of people across the board in many ways.

### FUNDING FOR THE STATES

Senator MIKULSKI. Now, in this year's budget, where are we in terms of being able to reinstitute the training? And I feel terrible about that, and I am sure others do. I do not think that anyone has really evaluated the consequences of this shutdown in terms of really day-to-day needs and also, again, this training. So, now, how much are you asking for, for the issues related to State and local government? Do you think that that is adequate in order to be able to do the training for fitness for duty—that we will call it—and, second, I know to help them modernize their communications systems which are so crucial now to effective and efficient response?

Mr. WITT. Gary, what is the total in training?

Mr. JOHNSON. I will address the first question for Senator Mikulski, in terms of the moneys we provide to States for this fiscal year. I might add that during the continuing resolutions that we were getting, the States were the No. 1 priority for us to allocate moneys on the incremental basis that we were given the authority to do. Now that we have funding authority for the rest of the year, we will be able to make the final allocations to them and ultimately make them whole for the year.

For this fiscal year, Senator Mikulski, we are providing to the States under the performance partnership agreements, or PPA, $113.2 million from our emergency management planning and assistance, or EMPA, appropriation, and through other sources of funding $132.2 million. Our 1997 request shows an increase in dollars flowing to the States through the PPA. We are seeking to provide to the States under our EMPA appropriation $117.5 million, and through other funding sources in our budget an additional $26.9 million, for a total of $144 million. Just about 60 percent of the dollars we get in our EMPA appropriation flow through to the States to build their capability.

### INCENTIVES FOR THE STATES TO IMPROVE DISASTER RESPONSE

Senator MIKULSKI. Now, what incentives will States have to improve their disaster response capabilities?

Mr. WITT. Well, we are trying to work with the PPA and with the disaster criteria to achieve more accountability at the State and local level. Also, we are working on an MOU with the States to establish a statewide mitigation plan within each State, where they identify their high-priority mitigation projects.

If the States perform under the PPA, and do their evaluations of where they are and what they are doing, have a statewide mitigation plan, and adopt better building codes and standards within that State and those communities, then, under the new criteria that we are developing, we will say, "OK, if Missouri has done this, this and this, and there is a major disaster in Missouri, then they will get a better cost share."

Senator MIKULSKI. So that is the incentive that they are going to get a better cost sharing?

Mr. WITT. In a disaster, yes.

Senator MIKULSKI. Now, suppose they do not carry out their part of the agreement?

Mr. WITT. Then it would be the same.

Senator MIKULSKI. Is there a penalty for not modernizing themselves?

Mr. WITT. We have not gotten to that point yet.

Senator MIKULSKI. And I am not advocating that.

Mr. WITT. Yes.

## PERFORMANCE STANDARDS

Senator MIKULSKI. This is just a series of questions. Well, what is going to be so important is the performance standards to meet as a condition of receiving it. You have got a predisaster grant, which I understand totals $110 million annually. In the past, performance standards have been bean counting, but not necessarily looking at fitness for duty, a strategic plan for prevention, you know, premitigation work.

Mr. WITT. Right.

Senator MIKULSKI. Could you describe what these standards are so that we go beyond the bean count, measure performance and what I call fitness for duty, and being there at those points where they are most needed?

Mr. WITT. There is a meeting this week on the PPA and evaluation of the performance capability at the State level. It is important that we bring, as you know, that capability up to the highest level in those States. It will not only help the response for people, but it will help in disaster costs. Also, that accountability is critical.

What has been done in the past is basically that the Federal Government has dictated to the State that it will do this and this and this or it will not get its EMA funding. Performance capability will now be based on their meeting the performance standards that they themselves help set, and then the same guidelines will be used. If they do not come up to that capability, then the EMA funding will be looked at as well, and they know that.

Senator MIKULSKI. But do you not have a set of performance criteria that——

Mr. WITT. Yes.

Senator MIKULSKI. I mean it is not State by State, issue by issue. Could you just tell me—or your team—what is the nature of that performance criteria that then goes beyond the bean count, but measures the accountability for performance that we are talking about—readiness, response, recovery, and mitigation?

Mr. WITT. OK, Kay.

Ms. GOSS. I am Kay Goss, Associate Director, in charge of preparedness, training, and exercises. I appreciate your question in that regard.

We are working with the National Governors Association in developing a full-blown plan to gauge State capability, but what we are looking at doing is testing the States, allowing them to show their accountability through the exercise process, rather than through writing us reports. We will be working with them hand in glove really, to bring them along, in terms of capability.

Our next major exercise will be an earthquake exercise along the New Madrid Fault in St. Louis. It was gong to be in 1996 but, in answer to your question about the trouble of the shutdown, it really did cause us to have to postpone that national exercise on earthquake preparedness.

Senator MIKULSKI. Well, I think what the committee is looking for, and I know I will turn it back to Senator Bond, is really something a lot more specific than this. And I appreciate your efforts.

Ms. GOSS. We are working on developing those specifics, really.

Senator MIKULSKI. When do you think you will be completed?

Ms. GOSS. Our goal is to have that done by the first day of the fiscal year of 1997.

Senator MIKULSKI. Do you think you could have that earlier for us, because I think it is going to be a very tight budget. We are going to be arguing for this. We had the issues around a disaster relief fund, as we have talked about.

Ms. GOSS. We have a lot of draft proposals and materials that you might be interested in seeing; that is, our work documents regarding that.

Senator MIKULSKI. No; I am interested in looking at where you are going.

Mr. WITT. The final product.

Ms. GOSS. The final. Well, I am real interested in that, too. I have been frustrated. But we want to have a quality product for you, and it is just not quite there yet.

Mr. WITT. We will get it for you.

Senator MIKULSKI. OK. Because I think it is important that when you go to the House and to the Senate that we will really have this. Because I think this then is part of the confidence building as we go forth here.

Mr. WITT. Absolutely.

Senator MIKULSKI. Thank you very much.

Ms. GOSS. Thank you.

Senator BOND. Thank you, Senator Mikulski. I would note that we had some of these discussions last year. And we think it is time, as we say in Missouri, to show us. We have got some real concerns, Mr. Director, as you and I discussed yesterday, when the big one lets loose along the New Madrid.

Mr. WITT. Absolutely.

## RECONCILIATION OF THE DISASTER RELIEF FUND

Senator BOND. There are a lot of States near and dear to us that are going to be involved in that, and there are some along the eastern seaboard that would be particularly close to Senator Mikulski's interests as well.

I mentioned the GAO's testimony about FEMA's financial management and the accounting systems and the IFMIS. On March 29, I believe the Acting Assistant Inspector General for Audit sent a memorandum to Mr. Johnson on the disaster relief fund reconciliation issues. Staff advises me that these concerns are still preeminent. They mention such things as the reconciliation was not accomplished by the fund and not tied to FAR's; the online payment and collection system was not reconciled; reconciliation of deposits to FAR's showed a 75-percent error rate; supporting documents relating to unprocessed Government bills of lading have been lost; efforts on the electronic certification system resulted in the correction of many posting errors; FEMA has made widespread postpayment adjustments, many of which appear unnecessary.

All of those things are ongoing questions. What is the status of the reforms in these areas? When will these be addressed so that the inspector general can come back and tell you and us that it is a reliable system? When can we expect to see that done?

Mr. WITT. Hopefully sooner than later, Mr. Chairman. The IFMIS, of course, is very, very important to all of us, and, hopefully, it will give us the accountability we need. But going back and getting the correct information to make sure that it is the most accurate information that we can put into that system has been very tough. This system replaces 30 different systems. As you know, the disaster fund has never been audited. It was never auditable until we started doing this. Last year, I moved the disaster fund under the CFO, and we asked for IFMIS to be put in. We are going forward. And I think it will be good for all of us in the future, particularly on accountability.

I will let Gary answer when he is going to be finished. Actually, I do not think it will ever be finished. [Laughter.]

Senator BOND. Yes; we will put your neck on the line, Mr. Johnson. [Laughter.]

I would like to have you cite a date so we can write it down.

Mr. JOHNSON. Mr. Chairman, my neck has been on the line.

Senator BOND. Hopefully, the Director can get away with hopefully, but you hopefully cannot. [Laughter.]

Mr. JOHNSON. Mr. Chairman, my neck has been on the line on this one for quite some time. But I understand your question. It is a very appropriate question to raise. Before I get into the reconciliation issue, I want to thank the committee for their support in 1996 for putting in a $1 million increase dedicated to the financial management system. Without that, we would have been a lot farther behind than where we are now in spite of the problems.

The new system will allow FEMA to convert to a standard general ledger system and allow us to be compliant with JFMIP and the Chief Financial Officer Act's systems requirements. I want to point out maybe just two key features of the system, because it has a relevance to the problem we are dealing with right now. It is a single integrated system, where financial data is entered only once. It is not entered in some of the 30 systems that James Lee was talking about, where you have duplication errors and problems. The system is secure. Only those who are authorized to have access to it can get it, and the various subsystems in it have the same provisions.

The current status of the system is that we are processing all allocations, commitments, obligations, payroll, and normal Treasury payments through the system. We are not experiencing difficulties with our current-year appropriations. Where we are having problems is converting the data from the old system and going through the reconciliation process of getting that data into the new system. The reason why we have a lot of those reconciliation problems is the fact that the old system was not a single integrated system and it was not set up to have any control over who got into the system.

Prior to the Director's coming here, there were nonfinancial people dealing with financial transaction in the field. We have been successful now in training over 200 people in FEMA who are the financial types to know what the system is and how to run the system. We are aware of the problems that the inspector general has raised to us, and I believe that we have the major problem isolated. I have asked for a plan to be provided to me on how to get out of this problem as quickly as possible.

We had a very difficult decision to make, Mr. Chairman, of when to move into the disaster relief fund, whether to wait or to proceed. We made the decision to proceed, and work through reconciliation as aggressively as we could, because we did not want to get into hurricane season again and put more bad data into the system.

My hope is that we can have this problem resolved here in the next 2 months or so. We have had temporary accountants working with us over 1 year, and I am expecting to get the plan from the staff on how to deal with the issue that I believe my staff has been able to isolate.

Senator BOND. I realize the difficulty you have on the past data. What I would like to know is that when we get into this coming season, that the data that is going in is reliable. What is past is history. We would hope that with this new system you also would have good data going into it. I mean what has happened, we can spend a lot of time trying to straighten it out. And I know that you have to make your best effort. But what I would like to know is that, at least from some point going forward, we will be able to say that the information going into a good system is reliable data and that we will know henceforward and what data is that henceforward date that we will be able to say will be a reliable data.

Mr. JOHNSON. I will commit to July 1, Mr. Chairman.

Senator BOND. July 1 of this year?

Mr. JOHNSON. This year. [Laughter.]

Senator MIKULSKI. Who writes these things down?

Senator BOND. I understand the difficulties.

Mr. JOHNSON. I do want to assure your, Mr. Chairman, that it is not the current year data we are having a problem with, it is the prior year. A multiyear fund aggravates the situation of getting to a good balance. And there will be a point in time where my colleague, George Opfer, who is the inspector general, and I will have to agree and recommend to the Director a balance that we go forward with henceforth so they can audit the financial statements that we prepare. I will commit to July 1.

### NONSPECIFIC DISASTER COSTS

Senator BOND. Thank you, sir.

Mr. Witt, We have discussed the nonspecific disaster charges. In 1994, it was $54 million; in 1995, it was $110 million; this year it is going to $127 million. Are you charging funds still to the Disaster Relief Fund to offset reductions in regular, nonemergency accounts? Can you tell us why the costs doubled from 1994 to 1995 and how you are keeping control of these costs for our information?

Mr. WITT. Mr. Chairman, before we started the process that we put in place last year, of having a Disaster Review Board for nonspecific costs, there was no way that the CFO or I had to even identify nonspecific disaster costs and be accountable. My Chief of Staff, the CFO and head of Policy and Regional Operations, review nonspecific disaster costs and weed out the ones that we feel are not in support of the disaster response—across the board, not just a specific disaster declaration.

The increase this year that we have budgeted is to put in place the NEMIS system, which is very, very critical for the future, if we are ever going to have all of the accountability we need. It will also help us to streamline our processes. The processing centers that we are setting up are another big portion of the cost increase. But all of this is going to save a lot of money in the outyears.

FEMA used to set up a separate processing center for every single disaster they had. There was no way that the CFO or anyone else could ever track and be accountable for those dollars with each individual disaster field office having its own processing center. It is very difficult to process applications and speed that process up. We have to have central processing, which we are going to be setting up, with your concurrence as well as NEMIS.

We have to move into new technology. The old systems that we have now are three different systems. These systems are just outdated. They are terrible. There is just no way that if we have a catastrophic disaster of any size, like we had in Northridge, that we feel that we could be accountable with those old systems.

### CRITERIA FOR NONSPECIFIC DISASTERS CHARGES

Senator BOND. Let me ask one last question in this particular area. The inspector general reported last July that some of the nonspecific disaster charges fall into a gray area. They said some of the interpretations of the interim guidelines were far too liberal, allowing virtually anything to be charged to the fund. Has the inspector general been satisfied that the new guidelines are appropriate and result in legitimate charges to the Disaster Relief Fund?

Mr. WITT. I think so. George is here.

Mr. OPFER. Good morning, Mr. Chairman, Senator Mikulski.

Senator BOND. Welcome. Would you introduce yourself?

Mr. OPFER. George Opfer, the inspector general for the Federal Emergency Management Agency.

Sir, we have been working with the Agency on the report that we commissioned and the audit inspection concerning the Disaster

Relief Fund. I think the steps that the Director has taken have been positive steps for the Agency, appointing the Disaster Resources Board that reviews all the requests for spending under the CFO, and other steps that have been taken to tighten up the criteria regarding the expenditures in the fund. We are continually working with the program officials to ensure our comfort level in our review of the process.

In continually following up on various aspects of those three reports, we have broken them into different systems, we are reviewing the IFMIS system that you talked about before, the NEMIS system, and other program areas, and we are following up on the report that we prepared for you for last year. We are continuing to work and expect to continue to issue a series of reports regarding the implementation of those recommendations; how the Agency is fulfilling those recommendations and the agreements that the Director has placed in effect so that the programs would be adhered to consistently across the line.

What we would like to do now is to go back and see, in the recent disasters, how well the criteria are working and look at the multiregions.

Senator BOND. So I gather that you are happier, but not totally satisfied?

Mr. OPFER. I think we are very happy with the progress. We would like to see the culture change completely. In 2 years, I think there has been a tremendous change in the approach, and the accountability is really something that we have to change. I know we have the commitment from the Director and the CFO. But it is a culture that we have to get to all the people who are in the Agency, to make sure that they are being responsible for the Federal dollars that we are all competing for now.

Senator BOND. Well, we would not want you to be totally satisfied. [Laughter.]

Senator Mikulski.

### PREDISASTER MITIGATION

Senator MIKULSKI. Well, we are talking about cultural change, both in terms of fiscal accountability, but delivering the service. Mr. Bond, one of the things we are moving the Agency to, and I believe that it has, is from an Agency that was divided between the cold war function and a civil defense mentality, as well as, too, in all hazards, risk-based—based on the community agency. And I think we are moving in that area. That is why I keep coming back to the State and local governments. Because they were uneven. We know that the Governor of Missouri always had an outstanding team. And we know the Governor of Maryland always had an outstanding team.

Mr. WITT. The Governor of Arkansas had a pretty good one, too. [Laughter.]

Senator BOND. We practiced a lot.

Senator MIKULSKI. So now we are up to three. [Laughter.]

Senator BOND. We had a lot of practice.

Senator MIKULSKI. I know you did. And part of it is because you had two great rivers and were on an earthquake fault. And we are in a hurricane zone and now we face white hurricanes known as blizzards.

But, having said that, I keep coming back then to the training issues, et cetera. But I want to go to mitigation. What do we pay for in terms of mitigation? But you want to establish a predisaster mitigation program. Could you tell me what you have in mind, what it would cost, and what you think the long-term savings would be? That is one.

And then, second, after the way we have been hit so hard in so many places, particularly on the east coast these last 90 days, have you done a lessons learned review both internally at FEMA and then externally with these respective State and local government agencies about lessons learned, and have we gone back to follow up about the mitigation?

So I want to hear about your plan, and then I would like to take us through, to use the exercise of what we have just gone through, what are the lessons learned, and then, do we go back and make sure we have gotten our money's worth for what we have done?

Mr. WITT. I hate to go back to the 1993 flood, but there was a very good example of lessons learned.

Senator MIKULSKI. That was the Missouri flood?

Mr. WITT. Yes; nine States. When Congress passed the Volkmer legislation to increase the cost share on mitigation to enable us to work with the State and local communities in a buyout/relocation of property that was in high-hazard flood areas, it was a very good example. In 1993, there were over 4,000 pieces of property bought out in Missouri alone, and over 10,000 total. The good example of the mitigation measures that were used there is that the same communities that were flooded in 1993 were flooded again in 1995, but no one lived there.

Pattonsburg, MO, which the chairman is so familiar with, and that I visited is a little town of 142 residents and 18 businesses that had been flooded 31 times in its history. That town is relocating. What we are doing in that program in mitigation will save over $200 million in 10 years in disaster costs. The same thing is true for earthquakes. Everything that we have identified in lessons learned in earthquakes—for example, retrofitting existing housing that homeowners or businesses themselves can do, will cut disaster costs for the future.

There was one little house in Hollywood, where every house was destroyed or sustained major damage. That one house never had a single brick loosened or a single window cracked, because the owner went down to the library and checked out a FEMA/State OES video on how to retrofit your house. He spent $1,000, did it himself, and never had a single brick loosened in his house, with houses on each side scooted over 3 feet off the foundation.

Senator MIKULSKI. Well, that is excellent. But tell me now, in your budget, what is the predisaster mitigation program?

Mr. WITT. We do not have any dollars in the budget for a predisaster mitigation program yet. It is a proposal that I would like to go forward with and work with Congress on. Long range, I want to work with the States, to put in a statewide mitigation plan, and to prioritize their high-risk areas and facilities. Then for those high-priority areas, we would work with the State predisaster mitigation projects to mitigate against future losses in those projects. This will save us millions of dollars in the future, just like the retrofit program in California did on bridges.

Senator MIKULSKI. Now, would you make that part of this memorandum of understanding that is part of this?

Mr. WITT. Absolutely.

Senator MIKULSKI. And then, essentially, count part of what—there has to be a State and local contribution that, essentially, we are going to give more help to those that practice self-help and maybe count it as an in-kind or whatever.

Mr. WITT. Yes.

Senator MIKULSKI. Is this the direction you want to go in?

Mr. WITT. I would like to. Because I think we have to start mitigating against future losses with the State and local communities. If we do not do that, we are going to continue down the same path of spending disaster dollar after disaster dollar in some of the same areas time and time again. We do not need to do that. I like to think of it as preventive medicine.

### MITIGATION AT PERRY POINT, MD

Senator MIKULSKI. We agree. I just need to hear what you had in mind, and then how you intend to operationalize it, and then what would be the consequences.

Now, let me come back to that, because I think, if we could, if we just even look at some of the situations that have hit our States. I am going to use an example that I am not sure how thoroughly it has been investigated, nor have I gotten into the investigation. The Susquehanna River flooded, and you know at Perry Point there is a community that was flooded very badly and you responded.

Mr. WITT. Yes.

Senator MIKULSKI. There was an issue of when the public utility opened the dam, what was the communications warning? And then, also, because it is the river, the water to allow the pressure to come off of the river, so you do not break some of the dams, you have these like microcanals that come into the dam. So in talking with Governor Glendening, it is not only what can we do to repair the damage, but what could be done so that it would not happen again.

Mr. WITT. Right.

Senator MIKULSKI. So we had three issues. No. 1, the communication related to evacuation. No. 2, in mitigating the infrastructure, what then could be done using new concepts in engineering that have been developed? And that goes way back to the beginning of the railroad days there. That is the kind of thing I am talking about. One, we learned a lot from Missouri. This man knows more about Missouri than any history professor or geographer or whatever. But now you see what I am saying and I do not know. So when I go back to lessons learned, is this like an example of what you would look at in Maryland, but also in working with the State folks?

Mr. WITT. Absolutely.

Senator MIKULSKI. So we want to hear about that whistle.

Mr. WITT. Absolutely. Under the disaster declarations, using Maryland as an example, there are mitigation dollars available to the State. The State, FEMA, and the locals would have a mitigation team assess the high-risk mitigation projects that the Governor and that local community want to try in order to mitigate against future losses and protect lives and health and safety. So the State and local community identify, as you were saying, those projects that are a No. 1 project for them to mitigate.

The problem is that the only time we can do these mitigation projects is when we have a disaster. We do not have the dollars to do it as a preventive measure. Also, for 1997 our request has other dollars going into mitigation in the States; we have asked for more dollars for a State mitigation officer in each State to help support what we are trying to do and to work with the State in establishing a statewide mitigation plan for the future. I think it is critical that they have that, because I do not think we will ever get to where we need to be without doing that.

### ANTITERRORISM FUNDS

Senator MIKULSKI. I know you have asked about the inspector general reports, the flood insurance and hazard mitigation. On the last initiative, there is another tragedy that has come to the United States of America, and that is terrorism.

Mr. WITT. Yes.

Senator MIKULSKI. To the extent that you can talk about it publicly, do you want to talk about the role this Agency is going to play in the funds you have requested? Because before we worried about nuclear attack; now we have these new repugnant weapons, whether it is foreign or domestic.

Mr. WITT. After Oklahoma City, I think we all realized that we needed to do a lot more as far as an all-hazard response capability is concerned. That was a unique situation, where FEMA was working with the FBI, as the lead Agency, at a crime scene and also a response to a disaster scene as well—consequences management. The FBI has the lead role for terrorists. We have the lead role for a Federal response plan on consequences management and the response and recovery efforts for that.

With the other Federal agencies under the Federal response plan, we have developed an annex to the Federal response plan, so that we will be able to respond to an incident of terrorism. The antiterrorism bill that Congress passed and the President signed does make $5 million available for us to help better train fire departments, obtain equipment, and to exercise to be able to respond to an incident of terrorism, whether it is biological, nuclear, or whatever the situation.

The most important thing that we can do is to work with those first responders, with those communities, and with other State agencies and Federal agencies to make sure that we are doing this together, and that there is a consistent plan in place to make it happen. I feel good about where we are as far as the coordination of the Federal resources. I still think that there needs to be some more dollars in the future to make sure that the exercise portion of the Federal response plan is exercised at the State and local levels.

Senator MIKULSKI. Well, thank you, Mr. Chairman. I do not have anymore questions. I think this is an interesting topic to be followed up, because one of the important things that need to be managed is the fear and panic.

Mr. WITT. That is right.

Senator MIKULSKI. And a lot of it is also based on the techniques around an evacuation strategy, a warning strategy, et cetera. And I am not only talking about a bomber, but it could be something accidental, like the release of hazardous material, toxic material, like you have already had to cope with in many of our communities, as well as something that is done deliberately to sabotage this. So, in this, I keep coming back to the State and local people and their training and their resources and what they anticipate.

Mr. WITT. It is critical.

Senator MIKULSKI. So, thank you, and we look forward to working with you.

Mr. WITT. Thank you, Senator.

### SNOW DECLARATIONS

Senator BOND. Thank you very much, Senator Mikulski.

I mentioned my concern about the snow removal policy. What is the latest cost estimate of this past winter's declaration for snow removal? How much did that cost us?

Mr. JOHNSON. The projected cost for the snow declarations from the blizzards is about $106 million.

Senator BOND. Why did FEMA recommend the declarations, and should the Federal Government be involved in snow removal?

Mr. WITT. It was a situation where we had a record snow storm that hit the east coast. In this area we had a record snow storm as did other States, even in New York. There was an issue of the life safety; we felt that it was critical to clear the emergency snow routes, so that ambulances, police, and fire could respond.

We did limit what we would fund. We limited it to one lane only each way for emergency snow routes. We found out that a tremendous amount of people were on dialysis machines, in States that were not capable of getting the emergency routes cleared to hospitals and nursing homes. I did take a tremendous amount of pressure from a lot of States because we did limit it. But we are defining the criteria. It is too broad. Hopefully, with the new policy we are putting in place, we will clarify that.

Senator MIKULSKI. Mr. Chairman, could I just comment?

Senator BOND. Sure.

Senator MIKULSKI. Because this is a question that, in fact, my own State did not receive an approval, and the Governor is contemplating a return. I think, first, we do need clarity. Second, I do not believe that FEMA should supplant what are local responsibilities. But what happened to us on the east coast was, I believe, the scientists used the phrase white hurricane.

Mr. WITT. Yes.

Senator MIKULSKI. We had so much water that it was the equivalent of us being hit by a hurricane. And, therefore, what we were talking about with the removal would be to maintain interstate commerce, and then also access for public safety vehicles to be able to get in and out. So there was no reason the Federal Government should ever pay for snow removal on my street in a local neighborhood. However, it would be, because the I–95 corridor going through Maryland—and I would use that as an example—and then also the ability to be able to get to Johns Hopkins.

Mr. WITT. Exactly.

Senator MIKULSKI. And so those were certain kinds of things.

Mr. WITT. It was limited. We paid for equipment and overtime hours, not regular hours.

### NEED FOR SNOW REMOVAL POLICY

Senator MIKULSKI. Right. But what I am saying is the criteria. We should not pay for snow removal, but we should have criteria where, first, the level, as established by science, which, in this case, was not your regular, routine "I'm Dreaming of a White Christmas" type stuff, which is beautiful, but also those criteria. I think that would be important, and I think it is important for the Congress to ask it, but not automatically reject it because it is snow.

Mr. WITT. Right.

Senator BOND. The other thing I would say is as sure as we are about to see little green apples show up, somebody is going to get hit with major snow in this coming winter. And we had better have a pretty clear definition of the limited circumstances in which Federal assistance will be necessary.

Mr. WITT. Absolutely.

Senator BOND. Otherwise you are going to have every snow-prone State in here asking for their share of it. And as we have previously discussed, there is not a big enough pot to do that. So we will look forward to very clear guidelines. That is due October 1?

Mr. WITT. Yes, sir.

Senator MIKULSKI. Mr. Chairman, just to alert the way, of course, nature works, which is where there is snow, there will be flooding.

Mr. WITT. Yes.

Senator MIKULSKI. So we had the snow that we had to cope with, and then in a very short time—this is when we were really hit by the type of flooding that you endure in Missouri.

Mr. WITT. And it was severe, too.

Senator MIKULSKI. So that is what we need to say. But anyway, we should spend our money on what we are required to do.

Thank you.

### BORROWING THE FLOOD FUND

Senator BOND. I am concerned about the borrowing to replenish the Flood Insurance Fund. I mentioned only $11 million was borrowed in 1993; no borrowing in 1994. Why is that level of borrowing necessary? Do you anticipate additional borrowing in the next few months? And when is this going to be repaid?

Mr. WITT. First, let me say that this past year was a very unusual year in floods. I will give you an example. Louisiana was flooded. It affected 30,000 households, and they had flood insurance. There was $500 million paid out in policies in Louisiana alone from the flood fund.

Elaine McReynolds, our Federal Insurance Administrator, is here and she would be more than happy to tell you, Mr. Chairman, about where we are at on that one.

Ms. McReynolds. Good morning, Mr. Chairman.

Senator Bond. Good morning, and welcome.

Ms. McReynolds. I am Elaine McReynolds, the Federal Insurance Administrator, and I appreciate the opportunity to discuss this serious issue with you.

The Director is absolutely right: 1995 was a tremendous year. Not only was there the Louisiana flood—and they had two with the big one being the $555 million one—but, also, the Texas flooding, as you will recall, occurred around October 1994, at the beginning of fiscal year 1995. That was $200 million. Opal looks as if it is going to be in excess of $300 million. And that does not count these other floods that are $20 million, $30 million, $40 million.

You mentioned earlier that in 1993, after the great flood in the Midwest, that we only borrowed $11 million, and that is true. But, fortunately, we had not had massive, catastrophic flooding like this prior to that, and the fund had been able to develop some modest reserve. Obviously, it was modest because we had a pretty seasonal year for 1994, and then in 1995, we hit a season that causes us to be into borrowing to the tune of $606 million.

There are a couple of reasons for that. The first and probably the most distinguishable reason is that this program was designed to act like an insurance company, but it is not. It has no mandated capital and surplus requirements. Most other insurance companies, when they have unseasonable experiences, they have some sort of capital or surplus fund that they can dip into. This program was not designed that way. It was designed so that when you got beyond your historic loss year, you would go into borrowing.

So the good news is the program is doing exactly what it was designed to do. The bad news is, however, that prior to this fund becoming self-sufficient, in that we have no annual appropriated tax dollars, in that the salaries and all of the expenses are taken care of by the premiums that are paid, that was not the case. And the salary and operating expenses were handled by borrowings or appropriations. So we are talking about a different kind of fund now, since the eighties, than we were talking about before.

I cannot answer your question on how much more we might borrow, because all of this depends very much on the weather. If we have a nice, average historic loss year this year, then with the increased sales that we have experienced, I would say that the prospects would look very good for us to pay back this borrowing, with interest, over a period of years. However, if we are in a catastrophic season similar to what we experienced last year, then nobody knows and we will not.

What we have done to bring some degree of assurance to this process is we have been in conversation with members of your staff and have agreed that should the borrowing get to the level of $700 million, then we will look at that point to see what we think further projections might be.

### STEPS TO ENSURE SOLVENCY OF FLOOD FUND

Senator Bond. What other steps, Mr. Witt, are being taken to ensure the solvency of the fund?

Mr. Witt. What we have tried to do over the past 1½ years is to go forward with a marketing campaign to increase policies purchased. A lot of homeowners out there just didn't realize that they had to buy separate flood insurance under homeowners, and they really did not know anything about flood insurance. Through marketing, we have made tremendous strides in the flood program. And what is increasing policy sales going to do?

Well, first of all, if they have a flood, it is going to help people recover faster. Second, if they have flood insurance, it is going to cost a lot less out of our Disaster Relief Fund, as well. Just this past year, what did we save Elaine, $750 million?

Ms. MCREYNOLDS. Just this past year, just for the Louisiana flood, we estimate that the American taxpayer was saved about $263 million. Because so many people in Louisiana had flood insurance, they did not sign up for SBA loans, which have the discount in them, they did not sign up for other housing assistance, and they did not qualify for grants. So it is a savings to the taxpayer.

In addition to that, if I may, because there are these mitigation standards, in the form of building and construction standards in place that are a requirement of this program at the community level, we estimate that the program saves about $770 million a year in reduced losses. So it is a good-news program.

Mr. WITT. Just in February alone, I believe you had how many calls?

### COVER AMERICA CAMPAIGN

Ms. MCREYNOLDS. Yes; I would like to get to that. After the Midwest floods, when it was determined that so few people had flood insurance, the Director asked us to increase, within a 2-year period of time, the number of people covered by flood insurance by 20 percent. Now, that was an ambitious goal, because it had never happened in the history of the program. But the good news is that that has occurred. We have increased the number of flood insurance policies by more than 20 percent.

Part of that happened because he also asked us to help educate and inform the people that the program even existed. It is amazing, as we have been across the country, how many very well educated people have said, "I live in a special flood hazard area: I cannot get flood insurance," or, "I do not live in a special flood hazard area, I cannot get coverage." When 20 to 30 percent of your claims come from areas outside special flood hazard areas, it is obvious that everybody should be able to get it and that they should know that they can get it. So he asked us to go forward.

Then we developed a marketing campaign called cover America. And you may have seen this ad.

Senator BOND. That is OK. I will catch it later.

Ms. MCREYNOLDS. Your staff certainly has seen it.

Senator BOND. Well, I have heard it. I listen to Cardinal baseball; I hear it on the radio. So I am well aware. I have been touched by cover America. [Laughter.]

Ms. MCREYNOLDS. Great. Absolutely. We have had wonderful responses to that. As you have noticed, not only in the print ads that are appearing in many publications, but also on the television, there is an 800 number for people to call for more information. The Director asked us to make sure that we did all of this in partnership with the insurance companies that work with us. Over 86 insurance companies sell and service flood insurance for the Federal Government. So when people call this 800 number—and, to date, over 40,000 people have called that 800 number—we refer them, through this listing of agents and insurance companies. We refer them to people in their areas, in their zip codes, who are ready, willing, and able to write flood insurance.

So we are seeing some substantial improvement in the numbers of policies written—because a substantial number of the people that call actually do purchase, and it varies between 17 and 30 percent, which is very good for a response to an 800 number.

### SUBSIDIZED FLOOD INSURANCE POLICIES

Senator BOND. Mr. Witt, subsidized policies, can you explain why it is good policy to have subsidized flood insurance—premiums subsidized and to what extent that will continue to be done this year and why there was not a recommendation, as there was last year, to increase premium rates for the subsidized flood insurance policy?

Mr. WITT. Well, first of all, we are working to cut the subsidy not only for this year but next year as well. Also, most of the subsidized policies that we are working with are held by very low-income people, which benefits them, but also it benefits us, as well, in savings on disaster costs.

Elaine, do you want to followup?

Ms. MCREYNOLDS. Yes, sir, there is a plan in place to reduce the subsidy—not to eliminate it, but to reduce it—as the Director has indicated. This year, there is a 10-percent increase for those subsidized policyholders. Next year's budget does not have an increase for reducing the subsidy, because part of the Reform Act of 1994 had a feature in there called the increased cost of construction insurance.

When people are flooded out, many times they do not have the money to bring the house or structure back up to code, only to repair it as it was. This coverage goes into effect the next year. The increase for that coverage is equal to about a 10-percent increase. So that is why we have not proposed any additional increases beyond that. We are estimating about 10 percent every other year, to help whittle the subsidy down.

Senator BOND. Any further comments on flood insurance?

Mr. WITT. I just wish we would have more policies sold, because it would cut disaster costs and it would help people to rebuild better and get their lives and their communities back much, much quicker. The flood program itself, Mr. Chairman, has made a significant difference.

In the flood this year, in the community of Woodland, in Washington State, it was very clear: The properties on one side of the street were built according to the flood program standards and were out of water and did not get flooded. The properties right across the street that were built before the community came into the program had 6 feet of water in the houses. So if a community enforces and joins the flood program, then the housing in that community is going to be better built and with less risk for many years. It is a good program and it needs to be reauthorized.

## SUBMITTED QUESTIONS

Senator BOND. Well, thank you very much, Mr. Witt. We will submit some further questions for the record.

[The following questions were not asked at the hearing, but were submitted to the Agency for response subsequent to the hearing:]

## QUESTIONS SUBMITTED BY SENATOR BOND

### DISASTER RELIEF FUND ISSUES

*Question.* FEMA's latest estimate of the 5-year average cost of disaster relief, excluding the Northridge earthquake, is approximately $1.8 billion, an enormous increase over the $320 million annual appropriation request for disaster relief. What does FEMA propose to do to decrease disaster costs, and under your leadership, what has FEMA accomplished as far as putting additional controls on disaster relief expenditures?

Answer. FEMA has implemented a number of measures to control disaster costs. Examples of such measures follow.

FEMA has implemented a "Teleregistration" system for disaster applications. This system has reduced the cost of taking a disaster assistance application from over $59 per application to under $25 per application. Average annual savings are estimated at $9.5 million.

A centralized processing system for human services grants will reduce the cost of program implementation. In August of 1995, FEMA completed a study of the costs of centralized processing. The study indicated a reduction in cost from $101.28 per application under the former processing organization to $25.88 per application under the National Processing Services Center (NPSC) organization. Continued decreases in processing costs are expected, due to the fact that fewer employees are on travel status now than there were prior to the completion of the above study.

FEMA intends to produce cost savings by divesting itself of its mobile home and travel trailer inventory. The market value of this inventory was estimated at $30 million in June of 1995.

FEMA agrees with the General Accounting Office's (GAO) recommendation to develop more specific criteria for the eligibility of private non-profit (PNP) facilities applying for Public Assistance grants. For example, FEMA has initiated an effort to more precisely define community centers in order to clarify which of these facilities FEMA considers eligible for funding. FEMA is using the conclusion of fiscal year 1996 as a target for the finalization of the definition of community centers.

Based on another GAO recommendation, FEMA is developing a more specific policy on funding temporary facilities during the appeals process. The new policy will better define an applicant's eligibility for a temporary facility, in addition to defining the length of time the applicant will be funded for a temporary facility.

In order to control the costs of small public assistance projects, as recommended by the FEMA I.G., FEMA is proposing the publication of two rules that would require:

- —Subgrantees of Public Assistance grants to account for and report actual costs for all small projects as an aggregate. Under the proposed rule, the subgrantee would be required to return excess funds if actual cumulative expenditures for all small projects for a subgrantee are less than the estimated costs; and,
- —grantees under the Public Assistance program to account for and report actual statutory administrative costs. Under the proposed rule, the grantee would be required to return excess funds if actual eligible expenditures are less than the statutory allowance.

As recommended by the FEMA I.G., FEMA intends to reduce costs in the Public Assistance Program by reducing the number of levels in the appeals process from three (3) to two (2). The reduction of the number of appeal levels requires a change in current regulations. A proposed regulation has been drafted and is currently under review by FEMA's Office of General Counsel. FEMA anticipates the publication of a final rule by the end of fiscal year 1996.

In order to better address issues related to disaster relief expenditures, FEMA established a Disaster Resources Board (DRB) in June 1995 to review all non-disaster specific resource requirements to be funded from the President's Disaster Relief Fund (DRF). The Board reviews and presents recommendations to the Director on: current fiscal year funding requests; annual operating plan allocations for non-disaster specific administrative accounts; DRF budget formulation request levels; and non-disaster specific temporary personnel resource requirements.

The DRB has established criteria for the use of the DRF Disaster Support Activity funding and has distributed these criteria to all FEMA organizations. A synopsis of the criteria is as follows:

FEMA's Stafford Act activities are supported by three appropriations:

—Salaries and Expenses: Resources to plan and administer Agency disaster programs. Emergency Management Planning and Assistance (EMPA): Resources to develop, operate, and maintain emergency management support systems and capabilities (other than for direct disaster relief operations) DRF:

(1) Direct Disaster Costs—directly related to the provisions of the Stafford Act (Titles IV and V); and

(2) Disaster Support (Non-Disaster Specific) Costs—support services, activities, or functions necessary to carry out disaster activities but not attributable to or easily charged to a specific disaster, e.g., centralized processing functions previously performed at disaster sites.

Specific criteria for the use of Disaster Support Activity funding are as follows:

—1. An activity funded under another appropriation may not be supplemented through the DRF, except for when that activity performs direct disaster support operations functions.

—2. An activity must qualify as a "necessary expense" under appropriations language—it must directly support disaster operations.

—3. Activities supporting specific disasters are not eligible for funding through the DRF Disaster Support account because those activities should be charged to specific disasters.

## PUBLIC ASSISTANCE APPEALS

*Question*. In a draft report entitled "Disaster Assistance: Improvements Needed in Determining Eligibility for Public Assistance," GAO compiled a number of options—suggested by state and regional officials—to control disaster costs. You said in your testimony you agree that the appeals process should be cut back to 2 levels rather than 3. When do you plan to do so, and what are the projected cost-savings associated with implementing this recommendation?

Answer. The reduction of the number of appeal levels requires a change in current regulations. A proposed regulation has been drafted and is currently under review by FEMA's Office of the General Counsel. In the past, nearly all second appeal decisions have been upheld during the third appeal. The draft proposal would require that all second appeals be immediately forwarded to the FEMA Director. When the final rule is implemented, we anticipate that the number of second appeals will remain constant, while third appeals will be eliminated. FEMA anticipates the publication of a final rule by the end of fiscal year 1996.

Based on a historical average of 15 third appeals per year, approximately 160 FEMA workdays per year will be saved. In addition, implementation of the appeals reduction proposal will eliminate approximately 210 days from the maximum appeals resolution process, thereby expediting the disaster closeout process. Finally, elimination of an extra appeal level will allow FEMA to devote time to other projects and policy development, which will improve the delivery of disaster assistance.

## ASSISTANCE TO PRIVATE NONPROFITS

*Question*. In a July 1995 report, the I.G. cited several examples of private nonprofits that do not appear to provide essential government services yet received FEMA assistance, such as a performing arts theater which received $1.5 million for repairs. Why should the federal government be providing assistance for facilities which do not provide essential government services? Should—and WILL—this policy be changed? If so, when?

Answer. The Stafford Act provides minimal guidance to FEMA as to the limitations on the eligibility of private non-profit (PNP) facilities. Therefore, when developing the regulations for the implementation of the Stafford Act, FEMA used conference reports, among other resources, to determine the intent of Congress in allowing this provision. FEMA originally concluded that the intent for inclusion of PNP's in the Act was the similarity that existed between PNP's and governmental agencies, making some PNP's as essential as public facilities.

Recognizing the inconsistent application of this definition of PNP's, specifically the definition of "other essential governmental service facilities," FEMA changed the regulatory definition of "other essential governmental service facilities" in October 1993. In the new definition, eligible PNP facilities were enumerated, removing a great deal of the original definition's ambiguity. However, in FEMA's experience, the definition of a community center (one of the listed, eligible facilities) remains subject to a wide range of interpretations, both by applicants and FEMA.

Consequently, FEMA has initiated an effort to define community centers more precisely in order to clarify which of these facilities FEMA considers eligible for funding. FEMA is using the conclusion of fiscal year 1996 as a target for the finalizing of the definition of community centers.

### DISASTER RELIEF FUND ISSUES

*Question.* State and regional officials made other suggestions to GAO such as improving insurance requirements, eliminating eligibility for facilities that are owned by redevelopment agencies, and restricting eligibility of public facilities to those being actively used for public purposes at the time of the disaster.

In addition, the I.G. provided a series of options in a report released last July, such as raising the cost repair threshold that triggers replacement of a public facility. In this Subcommittee's fiscal year 1996 report, we asked for FEMA to report back on its plans to implement the I.G.'s recommendations. When will FEMA submit its comprehensive proposal for limiting disaster relief expenditures, which particular recommendations is FEMA committed to implementing, and why is FEMA moving so slowly to adopt these cost-saving recommendations?

Answer. FEMA has provided the Subcommittee staff with a status report on FEMA's progress in implementing recommendations of the FEMA IG report. FEMA is committed to implementing all the I.G.'s recommendations in principle. Regulations have been prepared to implement some of the recommendations. FEMA is working overtime to catch-up from Government shutdowns and an extensive disaster workload over the past year. Program reforms and improvements are second only in priority to responding effectively to current disasters.

Most of the cost saving recommendations to which FEMA is responding are marginal changes to the existing way of doing business. FEMA's entire approach to funding disasters needs to be re-examined. We believe that our disaster criteria initiative, which will contain disaster payment thresholds as well as declaration thresholds, will comprise the major portion of reforms called for by both the GAO and the FEMA IG, and lay the foundation for substantial long-term Federal cost reductions.

It is important, however, to address the fundamental cost of disasters, and not only the Federal expenditure. That is to say, we need to reduce the actual losses, not simply transfer the costs to State and local jurisdictions. While it clearly is a benefit to the Federal sector to decrease the amount of dollars put into rebuilding after a disaster, the taxpayer will still need to pay the same amount (or more) unless we mitigate disaster losses.

### MINIMAL REPAIRS

*Question.* Starting in fiscal year 1992, costs under the Temporary Housing Program are growing at a faster pace than the Individual and Family Grant Program. Minimal Repair Grants have become the largest part of the program, with $886 million of the $1.3 billion provided for temporary housing going to minimal repairs in fiscal year 1994. What are minimal repairs? Why have minimal repairs grown so much? How much was spent on minimal repairs in fiscal year 1995 compared to fiscal year 1992? I understand that victims whose homes are habitable are being provided minimal repair grants—doesn't this go beyond the legislative intent of the program?

Answer. As authorized under Section 408(c) of the Stafford Act, a form of housing assistance provided by FEMA is a grant to repair the home to a habitable condition. Applicants whose homes are excessively damaged and cannot be repaired expeditiously may be assisted with Rental Assistance to rent alternative accommodations. If the home is determined to be safely habitable by a FEMA inspector, the applicant is not eligible for repair assistance.

FEMA does not believe that it is providing housing assistance that goes beyond the legislative authority of the Emergency Minimal Repair Program, under Section 408(c) of the Stafford Act. No repairs are funded that do not relate specifically to damage caused by the disaster and that do not make the house safe and secure for habitation. Because the term "habitable" is subject to a wide range of interpretations, there is bound to be some difference of opinion concerning the "habitability" of a particular house. Nonetheless, all repairs for which FEMA provides funding are necessary to make a dwelling decent, safe and sanitary for occupation. The average grants under the home repair program remain under $3,000.

A cursory analysis of financial data indicates the following expenditures under the housing program:

| Fiscal year | Minimal repairs | Total housing | Repairs as a percent of housing |
|---|---|---|---|
| 1992 | $158,070,777 | $189,696,212 | 83.33 |
| 1995 | 239,361,991 | 320,146,910 | 74.77 |

From these figures, it is clear that while the total expenditures under the housing program have increased 68.76 percent from fiscal year 1992 to fiscal year 1995, the percentage reflecting repair assistance has actually decreased. Increases in the total cost of the housing program can be attributed in part to the magnitude and frequency of recent disasters.

In 1992, a change occurred in the relationship between the Individual and Family Grant (IFG) Program and the housing program. Prior to 1992, repairs that were eligible for funding were divided into two categories: (1) FEMA's housing program provided assistance for structural and system repairs; (2) IFG provided assistance for complementary general repairs, including roof replacement.

In an effort to provide assistance for housing repairs in a simplified manner (one check vs. two checks) and more quickly (historically, housing assistance was provided significantly faster than IFG assistance), this program division was eliminated by combining both of the earlier categories of eligible home repairs into the housing program. Clearly, this has had substantial ramifications with respect to expenditures for the respective programs.

Further, an explanation for the increase in housing assistance relative to IFG assistance may be found in the determination of maximum award amounts. While the IFG maximum grant is tied to the Consumer Price Index and is reviewed annually, the FEMA administrative limit for a repair grant was established at $5,000 without any such systematic increase. Realizing the disparity of limiting repair assistance to $5,000 while the IFG maximum has slowly risen to $12,900, FEMA now allows a conditional increase of the repair grant limit to $10,000, based upon the cost of labor and materials in an area and the availability of rental resources following the disaster.

### CRITERIA FOR DISASTER DECLARATIONS

*Question.* In last year's hearing, Mr. Witt you indicated that FEMA was working on criteria for clarifying when a disaster declaration is appropriate. At that time, you said FEMA's preliminary criteria would be based on damage totaling a minimum of $75 per capita cost. That level of damage would require a 25 percent state cost-share, rather than the 10 percent cost-share of many recent disasters, but if the state had implemented a mitigation plan it would be a 20 percent cost-share.

—What is the status of finalizing that criteria, one year after it was "preliminary?" Why is finalizing this criteria taking so long?

—Is this criteria clearly described in the performance partnership agreements FEMA has signed with the states this year?

Answer. A basic component of our process toward finalizing these criteria is to ensure the participation and concurrence of our State partners in their development. This process has resulted in changes to the preliminary criteria that greatly improve their effectiveness and impacts. All ramifications of a new criteria must be explored since benefits to States could be affected. It would be fruitless to propose a change that would simply save money but was not acceptable to the States or Congress. In the past, Congress has precluded FEMA from taking certain cost saving approaches to disaster declaration criteria.

As of today, the performance partnership agreements (PPA) indicate that we will work with each State to develop improvements (such as the criteria) to the PPA. Once the criteria have been proposed and finalized, we will work with each State to revise their PPA on emergency management issues.

*Question.* According to GAO's statement for this hearing and its draft report on the public assistance program, FEMA officials have recognized a need to develop clearer and more comprehensive eligibility criteria, to disseminate policies more systematically, and to provide more training for the inspectors who prepare damage survey reports. Can you tell us what actions you have initiated in response to these needs, and when the actions will be completed?

Answer. FEMA is developing the *Public Assistance Guide for Applicants,* which will provide an extensive overview of the FEMA Public Assistance program and will capture current policy as it applies to program eligibility. The formal release of the guide is expected either late in the third quarter or at the beginning of the fourth quarter of fiscal year 1996. In addition, the *Public Assistance Guide for Applicants* will be updated on a regular basis to reflect changes in policy.

In the fourth quarter of fiscal year 1995 FEMA initiated a policy compilation effort. The purpose of this effort is to collect and review all existing, official public assistance policy released from FEMA Headquarters to FEMA Regional Offices, to index these current policies according to a subject classification system, and to distribute the compilation effort back to the Regions (while maintaining a master document at Headquarters). The master document will be updated on a regular basis, and all new policy decisions will be delivered via memorandum to FEMA Regional Directors. A formal release of this policy compilation effort is expected in the fourth quarter of fiscal year 1996.

FEMA provides training on a regular basis for its inspector force. FEMA's Emergency Management Institute is offering the Public Assistance Inspectors Course three (3) times in 1996. However, due to demand, ten (10) additional field deployed classes are scheduled to take place during the year. Over the past two years, over 800 personnel have been provided training through the Public Assistance Inspectors Course. After this year's training, FEMA expects this figure to increase to over 1,100. Additionally, on-site surge training is provided in FEMA Disaster Field Offices immediately following a declared disaster for FEMA, other Federal agency, and State inspectors. In addition to providing training for first-time inspectors, this training serves a dual-purpose as a refresher course for veteran inspectors.

## GRANTS MANAGEMENT

*Question.* In an audit performed by the I.G. at my request, the I.G. reported that FEMA had awarded public assistance grants totalling billions of dollars without an adequate grants management system to ensure that funds are used properly. What is the status of developing policies and procedures for all aspects of grants management, as recommended by the I.G., to ensure prudent expenditures of taxpayers dollars?

Answer. On February 27, 1996, the Agency contracted with Logistics Management Institute's Center for Public Administration (LMI) to perform an assessment of disaster grants management processes at FEMA. The findings of the initial phase of this assessment will be provided to FEMA within the next few weeks.

On March 29, 1996, the Office of Financial Management (OFM) was given the responsibility for a grants management initiative to implement a comprehensive approach for grants management within the Agency. The objective of this approach is to reach consensus on a consistent and improved approach for grants administration, including those grants funded by the Disaster Relief Fund.

Initial meetings have taken place between OFM staff and the various disaster programs to begin a review of existing policies and procedures required for program implementation. These findings, along with the initial results provided by LMI, will form the basis of policy and process action teams planned to clarify grants management financial and program responsibilities, as well as recommend policy and staffing requirements needed to accommodate unique program requirements while improving grants administration for the disaster program.

*Question.* About the same time the Stafford Act was passed, federal grants management was transferred from the federal agencies to the states. How do you feel this process is working? Specifically, could it be viewed as a case in which the recipients of federal grants are themselves responsible for policing the propriety and reasonableness of the federal grants they receive?

Answer. While Federal grants management was not fully transferred from Federal agencies to the States, States were required to increase their management oversight of grant recipients within their jurisdiction. This is especially true of FEMA programs which cost share with the State during disasters. These programs include the Individual and Family Grant (IFG) Program, the Public Assistance Program and the Hazard Mitigation Program. All of these programs, in most instances, are cost-shared with States on a 75 percent Federal/25 percent State/Local basis. In fact, the IFG program is administered by the States and the State establishes priorities for both the Public Assistance and the Hazard Mitigation programs. This same approach is a fundamental premise of our Performance Partnership Agreements (PPA's) with States.

Given these factors, the degree of Federal oversight has been decreased, but hopefully our partnership has increased. FEMA will continue to review the effectiveness of its disaster grant management responsibilities.

### SMALL PROJECTS AND ADMINISTRATIVE COSTS UNDER THE PUBLIC ASSISTANCE PROGRAM

*Question.* The I.G. also reported that FEMA's policy on small public assistance projects is resulting in unnecessary costs. Small project grantees are only required to certify that the project is completed, and they are not required to account for public costs. Therefore, the funds that are not being used for disaster-related costs are not being returned to FEMA. Has this policy been changed? If not, why not? Also, grantees are not required to account for and spend all the funds provided for administrative costs associated with public assistance grants. Has this policy been revised?

Answer. In response to the I.G.'s concerns, FEMA is proposing the publication of two rules that would require:

—subgrantees of Public Assistance grants to account for and report actual costs for all small projects as an aggregate. Under the proposed rule, the subgrantee would be required to return excess funds if actual cumulative expenditures for all small projects for a subgrantee are less than the estimated costs; and,

—grantees under the Public Assistance program to account for and report actual statutory administrative costs. Under the proposed rule, the grantee would be required to return excess funds if actual eligible expenditures are less than the statutory allowance.

FEMA expects that the proposed rules will be published in the Federal Register during the fourth quarter of fiscal year 1996 and will be finalized by the second quarter of fiscal year 1997. The final rules would be applicable only to those disasters that occur on or after the effective date; the rules would not be applicable to open disasters at the time of publication.

### PUBLIC ASSISTANCE COST-SHARE

*Question.* The I.G. suggested that considerable savings could be achieved by limiting the federal share for public assistance projects to 75 percent of estimated project costs, rather than 90 percent as in many recent disasters. Yet FEMA is advocating an 80 percent cost-share in some instances, and 90 percent in others. Why does FEMA seemingly disagree with the I.G.'s recommendation?

Answer. FEMA believes that adjusted cost-sharing is appropriate in some instances, and that it is critical to maintain this flexibility in order to respond adequately to all types and sizes of disasters, and to encourage hazard mitigation. The recommendation for an 80 percent Federal share of disaster costs is only one of a number of options being considered as an incentive to States that are undertaking aggressive mitigation actions. These incentives being considered are expected to encourage and increase the efforts of those States that are less effective in mitigation. Further, FEMA is looking at methods of linking the incentives to commitments made by the State under the Performance Partnership Agreement.

In the past, cost share adjustments above traditional levels (up to 90 percent) have only been authorized during disaster situations of catastrophic proportions, such as the Northridge Earthquake. In these instances, traditional cost shares could place unacceptably high financial burdens on States and local governments, slowing response and recovery activities. The 90 percent cost share is based on two alternative methods that evaluate the cost impact of the event on the State and local governments. If the total cost of the disaster (as authorized by the Stafford Act): (1) surpasses $64 per capita; or (2) surpasses .1 percent Gross Domestic Product (GDP), a 90 percent cost share may be authorized. Since 1985, only 27 of 385 disasters (7 percent) have received Federal funding above the standard 75 percent cost share.

### NATIONAL PROCESSING SERVICES CENTER

*Question.* Among the non-disaster specific charges to the disaster relief fund is the National Processing Services Center. In requesting approval to fund a NPSC, the agency claimed it would result in savings to the disaster relief fund, yet total costs for NPSC's almost double between fiscal year 1996 and fiscal year 1997 (from $28.5 million to $48.1 million in fiscal year 1997). Why? Where are the savings from the NPSC? Why is the center in Denton, TX being retained? When will the NPSC in Maryland be operational? How many permanent staff will be assigned to the new NPSC?

Answer. The National Processing Service Centers' fiscal year 1997 budget increase is attributed to the opening of the NPSC in Maryland, and includes the costs of designing and equipping the facility. The facility is scheduled to open in January 1997 at an operational level of 25 percent, with full operational capability reached by the end of calendar year 1997. In fiscal year 1997 the Maryland NPSC facility will maintain a base staff of 300, including 6 permanent full-time employees, with a surge capability of 600 staff. The staffing requirements for the Maryland NPSC were developed based on the historical average of 270,000 applications for disaster assistance per year and were designed to ensure immediate response to the needs of disaster assistance applicants.

FEMA has always incurred costs as a result of processing applications for assistance. However, these costs were associated with Disaster Field Office operations. Centralizing processing has resulted in savings in such areas as travel, per diem and salaries. A recent study found that FEMA has achieved a 75 percent decrease in the cost of processing applications. The study demonstrated that the cost of processing an application for assistance in a Disaster Field Office was $101.28 as compared to $25.88 to process an application for assistance in a NPSC.

Processing capacity as well as database redundancy in the event of the loss of one of the facilities necessitates multiple NPSC sites. In order to maintain the high level of service expected by the fifty State agencies that respond to disasters and the general public, it was determined that the Denton, TX NPSC should remain open.

### NEMIS

*Question.* The 1996 disaster relief fund expenditures include $21 million for the National Emergency Management Information System (NEMIS) and another $14 million in fiscal year 1997. The I.G. is critical of FEMA's management controls in NEMIS. NEMIS will transfer information to the Integrated Financial Management Information System (IFMIS), so it is particularly important that the financial data be reliable. In addition, the I.G. has found that the problems in the current emergency management system, "ADAMS", will be repeated if there are not adequate management controls. What is FEMA doing to ensure that the NEMIS system does not repeat the problems in ADAMS, and that proper management controls are instilled throughout the agency, not just in the Office of Financial Management?

Answer. The NEMIS Project Management Team has formed a working group to insure that appropriate internal controls are implemented in NEMIS. The Management Controls Support Group (MCSG) represents all functional, oversight and program areas involved in the NEMIS development effort, as well as direct support and representation by the Office of Inspector General and The National Security Agency. The MCSG reports directly to the NEMIS Project Manager.

In addition to reviewing the establishment of physical, operational, and access controls which will govern the functionality being built into NEMIS, members of the MCSG are participating with program managers in reviewing the development of business rules and processes which will be incorporated into NEMIS in order to identify potential vulnerabilities and build proper safeguards at the appropriate functional levels.

The MCSG will assure that NEMIS is in compliance with all Federal Laws and Regulations, Executive Orders, OMB Circulars, and appropriate directives which pertain to internal controls, and management principles pertinent to preserving the security, integrity, and accuracy of the information being handled by NEMIS.

*Question.* Please explain why you will not be able to comply with the requirements of the Government Management and Reform Act, which requires audited agency-wide financial statements to be submitted to OMB by March 1, 1997.

Answer. FEMA faced three major challenges that had to be overcome in order to prepare and audit agency-wide financial statements. These were the implementation of the core financial reporting system; the conversion and reconciliation of historical data; and strengthening the controls and procedures in the Disaster Relief Fund. The core financial system has been implemented and the historical data has been converted. FEMA is currently completing the reconciliation of historical data which includes the Disaster Relief Fund. The Disaster Relief Fund has not been reconciled since the inception of FEMA. The strengthening of controls and procedures for the Disaster Relief Fund is an ongoing project which includes changes to improve internal controls and personnel training in proper procedures.

FEMA currently has a three year phased implementation plan in place for the preparation and audit of agency-wide financial statements. To provide the most meaningful information to users, the financial statements are based on Directorates with separate statements for the Disaster Relief Fund. For fiscal year 1995, FEMA received unqualified opinions on the financial statements prepared for the Federal Insurance Administration, the Disaster Assistance Direct Loan Program, the Radiological Emergency Preparedness Program, and the Bequests and Gifts (Cora Brown) Fund. The Response and Recovery Directorate and the Emergency Food and Shelter Program will be included in the fiscal year 1996 submission. Additionally, there will be agreed upon procedures for the Disaster Relief Fund and extensive reviews of fund activities. In fiscal year 1997, all Directorates will be included in the submission and a Balance Sheet for the Disaster Relief Fund will be prepared and audited. In fiscal year 1998, agency-wide financial statements will be prepared and audited for all funds.

### NORTHRIDGE

*Question.* What is the latest estimate of costs associated with the Northridge earthquake, and why are the costs less than anticipated a year ago?

Answer. Current projections for the Northridge earthquake total $6,012,647,000. Like all project estimates, as the project approaches completion, the original estimate is refined to reflect the best projection of costs based upon the best and latest information available. For the fiscal year 1995 supplemental appropriation for the Northridge earthquake, FEMA made its projection based upon the best information available at the time. The scenario used for the original cost estimates strongly emphasized building upgrades required by State and local building codes and standards. The current estimates are based upon FEMA's experiences to date, which include refined inspections and the preparation of project applications. This year's offering of the Hazard Mitigation Program for Hospitals—the Algorithm—should not have any effect on current Northridge estimates. Cost projections are FEMA's best estimate at this time, and can change as architectural and engineering studies are completed on site-specific projects.

*Question.* In an answer to a question in last year's hearing record, FEMA indicated that its $6.7 billion fiscal year 1995 supplemental request included $4.9 billion for the Northridge earthquake, $629 million for disasters declared prior to fiscal year 1995, and $1.2 billion for 1995 disasters. What are the current estimates for each of these categories?

Answer. The following chart compares the latest cost estimates with those used for the fiscal year 1995 supplemental (in thousands of dollars).

[In thousands of dollars]

| | As requested | Current |
|---|---|---|
| Northridge | 4,865,603 | 1,160,647 |
| Declarations prior to 1995 | 629,265 | 337,810 |
| 1995 declarations | 1,205,132 | 1,567,478 |
| Total | 6,700,000 | 3,065,935 |

The difference between the current estimate for unmet needs and the total amount of the supplemental as adjusted by the rescission ($5,550,000,000) is $2,484,065,000 which is insufficient to meet projected unmet requirements from 1996 and 1997 that total $3,491,132,000.

### NORTHRIDGE HOSPITAL SEISMIC MITIGATION PILOT

*Question.* I understand you recently developed a pilot program for the repair and replacement of Northern California's acute care hospitals damaged by the Northridge earthquake, in which you will apply an algorithm to determine the amount of funding for each facility. This is in lieu of a lengthy review of each project, and is expected to expedite these critical projects. The project has a mitigation component. As I understand it, the hospitals can receive mitigation funds without going through the normal state competitive process. Why is this appropriate? I understand the mitigation funds may not be going to real mitigation projects. For example, funds may be used to ensure accreditation requirements are met. Is this true? If so, why is this appropriate?

The algorithm methodology resulted in FEMA offering approximately $289 million (including state cost share) under its Public Assistance Program (Section 406) to UCLA to fund measures which will significantly improve the seismic performance of its hospital facilities damaged by the Northridge earthquake. Also, FEMA intends to award an additional $52 million (including state cost share) under its Mitigation Program (Section 404) directly to UCLA to fund additional hazard mitigation efforts. This appears to be a very generous settlement and could go even higher depending on an independent assessment currently being conducted.

—Since the algorithm provided monies to rebuild to seismic standards, why are the Section 404 mitigation monies needed?

—Will the algorithm methodology increase disaster costs?

—Will this program set a precedent for other infrastructure money for mitigation?
—What criteria does FEMA have for using infrastructure money for mitigation?
—Does FEMA know how much it is spending on mitigation outside of the Hazard Mitigation Grant Program (Section 404)?

Answer. The Seismic Hazard Mitigation Program for Hospitals (SHMPH) was established this year in order to provide a balanced program providing for both the repair and upgrade of hospital buildings constructed prior to 1973, the year that the California Hospital Seismic Safety Act, which substantially raised the required seismic protection for hospitals, was enacted. The rationale for this SHMPH is that, in the case of hospital buildings, FEMA disaster assistance is not fully effective or helpful if it only includes the repair of visible damage while still leaving older buildings in their same vulnerable condition. It has long been accepted as appropriate seismic policy that buildings housing individuals who do not have freedom of movement should be constructed to a higher standard than others. In addition, hospital facilities are of particular importance because of their critical need following a disaster. In this regard, the older hospitals, which have been identified as suffering structural damage during the Northridge Earthquake, are the subject of this special program designed to upgrade them to a standard similar to their newer neighbors, in addition to the repair of the earthquake damage.

This program serves two goals:

(1) It removes the older hospital buildings from what has often been a lengthy, contentious process where the damage must be identified and all parties must agree on what repairs and protection measures are needed to make the building safe. Under this Program, every hospital building is provided the same level of assistance based on two levels of protection: Immediate Occupancy and Damage Control. All of the general acute care in-patient hospital buildings fall under "Immediate Occupancy."

(2) It provides a fixed Federal grant based upon simple input values, while providing the hospital with a maximum flexibility in using these funds to tailor its infrastructure to best meet the future health care needs of the community.

This program only applies to hospitals which were structurally damaged during the Northridge Earthquake. The value of the "Algorithm," which determines the grant amount for each hospital building, is that it can be simply applied to each building with the determination of the floor area and identification of structural damage being the only field work required. While this Program only applies to Northridge area hospitals, as a concept it could be used for other types of buildings in other locations by replacing the data in the Algorithm with data appropriate for the subject building types. The grants generated by the Algorithm in the Hospital Program are much higher than would be appropriate for other buildings such as office buildings (city halls, for example) and schools. The multipliers in the Algorithm which are set to the high standards of Immediate Occupancy in the case of hospitals, could be set to "Life Safety" or "Damage Control" for most other building types.

Section 406 of the Stafford Act provides for hazard mitigation in addition to Section 404:

> "Net Eligible Cost * * * [includes] the cost of repairing, restoring, reconstructing, or replacing a public facility or private nonprofit facility * * * in conformity with current applicable codes * * * including * * * hazard mitigation criteria required by the President * * * "

Therefore, FEMA is not bypassing the State's Section 404 competitive grant process. The inclusion of hazard mitigation considerations has been an accepted part of Section 406 funding for all types of disasters, as it is such disasters which illustrate the need for higher standards. Most commonly, the section 406 funds have been used to mitigate future hazards which are found to exist in buildings damaged by the declared disaster, and the 404 funds are used primarily to mitigate identified hazards other than in damaged buildings eligible for Public Assistance.

It should be noted that California had already identified hospitals as one of their highest priority 404 grant targets, and this Program, with its combination of 406 and 404 funds, represents a partnership between the State and FEMA in the decision making process.

*Question.* I understand the mitigation funds may not be going to real mitigation projects. For example, funds may be used to ensure accreditation requirements are met. Is this true? If so, why is this appropriate?

Answer. The Program does not allow funds to be used to "ensure accreditation requirements are met." Funding is provided as reimbursement for expenses rendered in designing and constructing specific repair and mitigation projects which FEMA must approve as qualifying in advance. For example, UCLA claimed that the UCLA Medical Center Library was essential for their medical school accreditation and thereby should be included as an essential part of their SHMPH funding. FEMA found the UCLA Medical Library to be ineligible for this program because its function was not one of the essential functions required by the State Health and Safety Act for an Acute Care General Hospital.

If this specific question pertains to the acceptance of the construction standards as meeting the State's regulatory requirements as administered by the Office of State Health Planning and Development (OSHPD), the Program's funds will be adequate to meet these seismic safety standards set by this agency, but merely meeting the OSHPD requirements is not the purpose of the Program. If any subgrantee completes the construction of the eligible repair and retrofit project for less than the approved FEMA grant, the unexpended funds must be returned to FEMA.

The Section 406 mitigation funds used by the program were determined to cover the expected cost of the work necessary to upgrade the structural performance of the building to a level that would assure immediate occupancy following the next major earthquake. While this allows for the installation of earthquake resistant supports for existing utilities, mechanical and electrical equipment, etc., in addition to the structural strengthening of the building shell, the Section 406 funds determined by the Algorithm do not provide for new improved utilities, mechanical and electrical equipment, etc., unless they are displaced by the structural upgrade work. Inclusion of 404 mitigation funds allows for the incorporation of new earthquake resistant utilities, mechanical, and electrical equipment, etc. in the structurally upgraded hospital building. Thus, the building's post-earthquake performance and its daily functional performance will both be improved. This upgrade of utilities, mechanical and electrical equipment, etc. is consistent with traditional use of 404 hazard mitigation funds.

The estimate for the repair of damage from the Northridge Earthquake which was used as a basis for the 1995 supplemental appropriation was considerably larger than the predicted expenditure under the Algorithm. Even with the funds determined by the Algorithm fully dispensed, significant funds earmarked for Northridge recovery will remain available for other work. In the case of the three hospital institutions settled to date, the amount determined by the Algorithm is substantially less than their original requests, while it still provides enough funds to accomplish the mitigation mission.

Since this Algorithm program application is unique, it is not possible to predict whether its use would increase disaster costs in general. This approach cannot be applied to any other disaster or building type without careful consideration of parameters appropriate to the specific hazard mitigation situation, building type and building occupancy.

The structure of SHMPH, where eligible funding can be determined on the basis of building area and building uses rather than complex and potentially contentious criteria, does set a worthwhile precedent for possible application in future funding programs. While the dollar per square foot multipliers developed in this algorithm are necessarily unique to the seismic mitigation of acute care older hospital buildings, FEMA is currently evaluating the applicability of the Algorithm methodology to other disaster recovery scenarios.

The criteria for using infrastructure money for mitigation must necessarily vary because of the wide variety of risks presented by different types of disaster threats. In the case of this program, the criteria were based on: (1) the likelihood of a recurrence of the same type of disaster (earthquake) in the same locale; (2) the importance of the infrastructure (acute care hospitals) to the community in the event of a future disaster of the same type; (3) the demonstrated vulnerability of the subject buildings within the building type (pre-1973 California Hospital Seismic Safety Act buildings) to damage severe enough to result in their closure at the time of a future disaster; and, (4) the cost effectiveness of undertaking upgrading to a common standard at the time that FEMA eligible repairs are carried out on earthquake damaged components.

In planning the repair of buildings damaged by disasters, subgrantees are asked to recommend cost effective seismic hazard mitigation measures that can be accomplished during the building repair construction. These mitigation proposals are evaluated for their cost-effectiveness before such mitigation grants are approved.

The total 406 mitigation funds obligated to date is about $10.6 million (Federal share) for about 450 projects. It is estimated that the SHMPH 406 federal funding will total about $1.26 billion. These SHMPH funds provide for both repair and mitigation in the same grant without separate identification.

### DC TASK FORCE ON SNOW REMOVAL

*Question.* When winter storms caused several feet of snow to shut down Washington, D.C. for several days this year, the President asked FEMA to head up a task force to look at the District's problems in addressing snow removal requirements. Why was FEMA put in charge of this problem—should this really be FEMA's responsibility? What is the status of this task force and what is FEMA's role?

Answer. FEMA was put in charge of heading up this task force as a natural outgrowth of its role as the primary coordinating agency for disaster and emergency planning and response. FEMA received this assignment on January 19, 1996, when the President requested a review of the Washington area's response to the "Blizzard of 1996". The President's intention was to evaluate various options for improving snow removal strategies for the District of Columbia, the Commonwealth of Virginia, and the State of Maryland, so that the Federal government would not be closed down by winter storms.

FEMA was placed in charge of this effort under the authority of Title III, Section 302 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. FEMA's role is to coordinate among all levels of government in planning for and responding to emergencies and disasters. Therefore, the President directed FEMA to ensure that all levels of government in the national capital area would work together to prevent interruption to the operation of the Federal government by future snow emergencies. Snow removal, however, remains primarily the responsibility of State and local governments.

Although there was recognition that Federal assistance was needed, it should be noted there was also an understanding that the scope and type of assistance would be limited, to ensure that the American taxpayer did not have to pay for the normal snow removal costs of affected jurisdictions.

FEMA believes that it is important to continue coordinating the efforts of other Federal agencies as well as State and local governments to improve their response to the effects of large snow storms. The original task force established by FEMA has charged the Washington Metropolitan Council of Governments (COG) with revising the current Regional Snow Emergency Plan.

This task force will continue operating, in conjunction with COG, to coordinate meetings revising the Regional Snow Emergency Plan in order to prevent the recurrence of the paralysis of the Federal government created by the Blizzard of 1996. The revised Snow Emergency Plan will incorporate a requirement for an annual inter-jurisdictional tabletop exercise of the revised COG snow emergency plan. This will test the effectiveness of snow-removal plans and procedures of agencies at the Federal, State and local levels prior to the onset of the snow season, and familiarize the jurisdictions with cooperative operation in a major weather emergency.

### PRE-DISASTER MITIGATION PROGRAM

*Question.* You said in your opening statement that FEMA wants to establish a pre-disaster mitigation program. Can you describe in more detail what you have in mind, what it would cost, how it would be funded, and what the long-term cost savings might be.

Answer. Since we are still exploring the possibility, it is difficult to be very precise in terms of cost and benefits, but clearly, we are paying too much for rebuilding Federal, State and local infrastructure after disaster events. I believe these costs can be reduced by targeting pre-disaster mitigation actions at those critical public facilities which face the highest natural hazard threats. The expense is not likely to be low, but it will pay for itself in reduced disaster expenditures.

As I indicated in my opening statement, I am also conducting a series of roundtables with FEMA's partners and constituency groups from the emergency management arena. These events are doing a lot to help us in defining the best consensus approaches to pre-disaster activities, particularly mitigation.

Our early examination of the facets of a pre-disaster mitigation program have also led to some preliminary ideas about different aspects:

—The program needs to be conducted within the context of the national mitigation strategy, so there needs to be a coordination among Federal agencies with resources that can be brought to bear on our vulnerabilities to natural disasters;

—The rehabilitation of vulnerable buildings can not be done in a vacuum; that is, the surrounding jurisdiction should be required to have in place some minimum level of mitigation activity; and

—We need to have incentives in place in order for the effort to be successful.

### STATE CAPABILITIES

*Question.* State Capabilities. The I.G. has in the past been critical of FEMA's ability to adequately assess the capabilities of states to respond to disasters. FEMA's assessment method, referred to as "CHIP," is a check-the-box questionnaire which really doesn't measure capability.

—Has FEMA revised the CHIP system, or enhanced it, so that a thorough and accurate assessment of capabilities of each state to respond to major disasters can be made?

—Are such assessments part of the performance partnership?

Answer. FEMA is working closely with the States through the National Emergency Management Association (NEMA) to develop a new approach to capability assessment which focuses on operational readiness and general emergency management capability. The goal is to develop an approach which is fair and equitable across all the States. Once the approach is developed and tested, the plan is to integrate the concept into the Performance Partnership Agreements (PPA's). It is anticipated that a mutually acceptable approach can be introduced in fiscal year 1997 and integrated fully into the PPA by fiscal year 1998.

### NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

*Question.* How would FEMA assess the effectiveness of the National Flood Insurance Program's "Cover America" major advertising campaign? Has it met expectations in terms of increasing coverage?

Answer. The Cover America campaign is working very well. It is a comprehensive campaign that uses television, magazines, newspapers, Yellow pages, and other media to make people aware that everyone has some degree of flood risk and that they need to protect themselves with flood insurance. Director Witt asked our insurance industry partners to accomplish a 20 percent increase in flood insurance policies in the two-year period from October 1, 1994 to September 30, 1996. In return, FEMA promised to do three things: (1) effectively conduct a nationwide campaign that communicates the value of flood insurance to American people, (2) simplify flood insurance rating and underwriting and make it easier for consumers to understand and for agents to sell, and (3) encourage greater lender compliance with the mandatory flood insurance purchase requirements.

All these efforts together are generating results. In seventeen short months, our insurance industry partners sold 564,647 new flood insurance policies. Based on previous growth rates, FEMA estimates that without this concerted effort, the program would have only grown 7 percent during this period, instead of the 20 percent growth we experienced.

*Question.* What percentage of total premiums are subsidized, will premiums on "subsidized" policies be raised this year, and to what extent will policies continue to be subsidized?

Answer. Currently, about 38 percent of NFIP policies pay lower than full risk premiums. The NFIP has been implementing a plan since 1981 to reduce the program subsidy in various ways, including regular rate increases on subsidized policies while still maintaining premiums at affordable levels. In April 1996, subsidized rates were increased 10 percent.

Next year, FEMA will implement the Increased Cost of Construction (ICC) coverage authorized by the National Flood Insurance Reform Act of 1994. This new coverage will help reduce the subsidy over time by providing substantially damaged and repetitively damaged properties with additional funds needed to pay for the increased cost of rebuilding to the program's minimum floodplain building standards. A maximum charge of $75 will be added to flood insurance premiums for this coverage; however, the cost may be as little as $10 based on the risk that the structure has of being damaged and a claim made.

*Question.* There is a $1 billion statutory limitation on borrowing. Is there any danger that the agency will need to exceed this ceiling?

Answer. The severe flooding over the past year has resulted in unprecedented losses of the NFIP. Because of major flood events in Texas, California, Louisiana, Missouri, and Hurricane Opal, the NFIP has incurred flood losses greater than one billion dollars. As of the end of May, the NFIP has borrowed $688 million to pay these losses. FEMA's current projections indicate that the borrowing has reached the high water mark, and repayments may begin as early as August 31, 1996. FEMA has met with Committee staff and agreed to inform the Committee in the event the borrowing exceeds $700 million. As you know, the Fund's status at any given time is subject to the relative unpredictability of storms, thus the need for borrowing authority. In fact, in creating the NFIP, the Congress anticipated that the program would need to borrow funds periodically and established a one billion dollar borrowing authority. When flood losses exceed historic average levels as they have the past two years, the NFIP must borrow from the Treasury to pay losses. Whatever the program borrows will be repaid with interest from policyholder premiums when the current cycle of heavy flooding ends and flood losses return to average or below-average levels.

*Question.* For section 553 flood mitigation grants, FEMA is proposing $20 million for fiscal year 1997. This program, as with the management of the flood insurance program, would be funded through the flood insurance policy fee. I understand that fees in fiscal year 1996 were less than expected, and that the mitigation program likely will receive less than $12 million originally estimated. How much will the fiscal year 1996 mitigation program actually receive in fiscal year 1996, and why were fees less than anticipated? Is the $20 million fiscal year 1997 estimate realistic? If not, what is a realistic estimate?

Answer. The provisions of the Omnibus Budget Reconciliation Act of 1990, Public Law 101–508, amended Section 1307 of the National Flood Insurance Act of 1968 to require the National Flood Insurance Program (NFIP) to collect a Federal policy service fee to cover administrative expenses and flood mitigation activities. In March 1995, FEMA raised the Federal policy service fee from $25 to $30, to fund the grant program and other costs of implementing the legislation. In fiscal year 1996, FEMA expects to fund the newly-created mitigation assistance grant programs up to $12 million depending on Federal policy fee collections. Current data indicates an increase in policy sales at this point. For fiscal year 1997, $20 million for the mitigation assistance grant program is a realistic estimate.

*Question.* Last July, the I.G. issued an audit of FEMA's enforcement of flood insurance purchase requirement for disaster aid recipients, and found that purchase and maintenance requirements were not being uniformly enforced by FEMA regions or the States. What has FEMA done to correct this problem and implement the I.G.'s recommendations? Has guidance been issued to enforce the flood insurance requirement? Has training of staff taken place?

Answer. The key to enforcing purchase of flood insurance is the establishment of the group flood insurance policy. Now that the Group Flood Insurance Program (GFIP) is in effect, everyone that receives individual assistance that requires the purchase of flood insurance will automatically be covered. Instead of giving the grantee the funds to purchase insurance as part of their grant award, which resulted in less than complete compliance, the coverage will be purchased for them, resulting in 100 percent compliance. The policy will be for three years of coverage. No further guidance or training is necessary.

Under the NFIRA, anyone that does not maintain their insurance after three years will not be eligible for future flood disaster assistance. This provision will be enforced through the assistance processing software at our central processing centers. The software will connect the agency's flood insurance data base with disaster assistance records which will allow automated denial of claims for failure to maintain flood insurance. The system is being designed to eliminate the need for training or further guidance and procedures.

## GROUP FLOOD INSURANCE

*Question.* What is the status of the group flood insurance rulemaking?

Answer. The Director signed an interim rule making a Group Flood Insurance Policy available to victims of disasters, both Presidentially declared disasters as well as State-only disasters, on April 25, 1996. The interim rule was published in the Federal Register on May 1, 1996 at 61 FR 19197. We have invited comments on the rule which are due by July 1, 1996. Once the comment period closes, we shall review the comments, make changes we agree are desirable or essential for the program, and estimate that the rule may be published in late fiscal year 1996 or early in fiscal year 1997.

The interim rule is a complex one. It modifies not only the regulations of FEMA's Individual and Family Grant program but also the regulations of the National Flood Insurance Program; and, it involves two separate program areas of FEMA—the Federal Insurance Administration and the Response and Recovery Directorate. Due to the complexity of the rule, it simply took longer than we anticipated to work out all the details to put the regulation in place.

## NATIONAL FLOOD INSURANCE PROGRAM (NFIP)—TITLE V

*Question.* Please describe the progress which has been made in implementing Title V of the Community Development and Regulatory Improvement Act of 1994, including training and educating federally regulated lender to require flood insurance for loans on property located in flood hazard areas?

Answer. Since the enactment of the National Flood Insurance Reform Act of 1994, the Federal Insurance Administration (FIA) has been active in conveying the importance of the Act. Numerous meetings with members of the Federal Financial Institutions Examination Council (i.e., Federal Deposit Insurance Corporation, Office of Comptroller Currency, Federal Reserve System, National Credit Union Administration, Office of Thrift Supervision, and Farm Credit Administration), the Government Sponsored Enterprises for Housing (i.e., Freddie Mac & Fannie Mae) and the lender trade associations (i.e., American Bankers Association, Mortgage Bankers Association and America's Community Bankers Association) were held to discuss the interpretation and implementation of the Act. FIA has also met with Federal agencies (i.e., Small Business Administration, Veterans Affairs, Department of Housing and Urban Development, and Agriculture), numerous lending institutions, and with the insurance industry.

Additionally, FEMA conducted 250 lender workshops nationwide to educate 7,632 federally-regulated lenders about the flood insurance requirement for loans on property located in flood hazard areas. Since the beginning of fiscal year 1996, FEMA has conducted 78 workshops for 1,842 lenders.

Attached please find a summary describing the progress which has been made in implementing Title V of the Community Development and Regulatory Improvement Act of 1994.

## TITLE V OF THE COMMUNITY DEVELOPMENT AND REGULATORY IMPROVEMENT ACT OF 1994

### *Completed Actions*

The increased flood insurance coverage limits (Section 573) were effective March 1, 1995.

The 30-day waiting period (Section 579) before flood insurance policies go into effect was also effective March 1, 1995.

FEMA published a NFIP Policy Issuance 8–95 on the 30-day waiting period and exceptions.

FEMA's final rule establishing the Standard Flood Hazard Determination Form (SFHDF) (Section 528) was published in the Federal Register on July 6, 1995. Mandatory use of the form began January 2, 1996.

On January 2, 1996, FEMA's final rule governing Review of Determinations for Required Purchase of Flood Insurance became effective. This was published in the Federal Register on December 5, 1995.

The Federal regulators final rule requiring use of the SFHDF, for Loans in Areas Having Special Flood Hazards, was published in the Federal Register on July 6, 1995.

The Federal regulators' proposed rule, making uniform all regulations and guidelines implementing common statutory or supervisory policies, was published in the Federal Register as Part II, Loans in Areas Having Special Flood Hazards, on October 18, 1995, with a 60-day comment period. FEMA submitted comments on the proposed rule.

The Flood Insurance Interagency Task Force conducted meetings on March 30, July 13, September 22, and December 14, 1995. Six workgroups were formed to accomplish the requirements of Section 561.

The 1995 Community Rating System (CRS) coordinators' manual incorporates new activities and goals related to protecting natural and beneficial functions and coastal erosion hazards.

Two studies were initiated to fulfill requirements of Section 577. "Evaluation of Erosion Hazards" of the National Flood Insurance Reform Act of 1994: On September 25, 1995, a study was initiated to map erosion hazard areas for Suffolk and Monroe Counties, New York; and, on September 28, 1995, a study was initiated to evaluate erosion hazards for Sussex County, Delaware.

A meeting was conducted on December 5, 1995 between members of FEMA, State Coastal Zone Management Agencies, academia, private industry and NOAA to discuss the "Evaluation of Erosion Hazards Study" mandated by Section 577 of the NFIRA.

The National Mitigation Conference with workshops and discussion forums on NFIRA implementation was conducted on December 6–8, 1995.

### SUBTITLE B

**Subtitle B focuses on lenders and lender compliance.**

### *Expanded Flood Insurance Purchase Requirement (Section 522)*

#### SUMMARY

Federal agencies acting as lenders and regulated lending institutions are to require flood insurance when making, increasing, extending, or renewing a loan, and maintain the coverage for the term of the loan as a condition for applicable loans, improved real estate or mobile homes which are located in a Special Flood Hazard Area, or collateral. The Act also requires Government Sponsored Enterprises (GSE's) that purchase loans in the secondary mortgage market to implement procedures to ensure that applicable loans are covered by flood insurance and that the coverage is maintained for the term of the loan.

#### ACTIONS

FIA met individually with 6 major Federal regulatory agencies, 2 Federal lending agencies, and GSE's to obtain their input about lender actions to comply with the mandatory purchase requirements. These meetings were completed in January 1995.

FEMA intends to submit a report of lapsed flood insurance policies, with the mortgagees identified, to the Federal regulatory agencies and GSE's. A workgroup consisting of private insurers, NFIP contractor and FEMA is working out details on how to provide this information.

The Federal Financial Institutions Examination Council (FFIEC) established a subcommittee to work solely on flood insurance lender compliance issues. Proposed regulations were printed in the Federal Register on October 18, 1995, allowing a 60 day comment period closing on December 18, 1995.

The regulators, through the FFIEC, are targeting to publish the final rule this summer, with an effective date of October 1.

### *Escrow of Flood Insurance Payments (Section 523)*

#### SUMMARY

Effective September 23, 1995, Federally-regulated lenders, their servicers, and Federal agency lenders are required to escrow for flood insurance on loans secured by improved residential real estate or mobile homes if the lender requires escrows for taxes, insurance, or for other reasons.

#### ACTIONS

Although the statutory requirement to escrow was intended to be effective on September 23, 1995, escrowing is not yet required because the regulators' Final Rules have not been issued. However, FEMA recommends that lenders begin escrowing as soon as possible. Lenders who escrow will comply 100 percent with the statutory requirement that lenders must maintain flood insurance during the term of the loan.

FEMA and Write Your Own companies are including notices to lenders with the flood insurance policy renewal notice to alert them to the escrow requirement.

Through the Flood Insurance Interagency Task Force, FEMA, the FFIEC, GSE's, and other Federal agencies, are studying present examination procedures and will make recommendations in their report.

### *Placement of Flood Insurance by Lenders (Section 524)*

#### SUMMARY

*Force Placement:* Lenders are required to notify borrowers if their building or mobile home is in a Special Flood Hazard Area and requires flood insurance. If the borrower has not purchased flood insurance within 45 days of the notification, the lender has the statutory authority to purchase flood insurance on behalf of the borrower. FEMA recommends the lender use the Mortgage Portfolio Protection Program (MPPP) when force placing.

*FEMA's Review of Determination:* Within 45 days after the lender's notification that flood insurance is required because a building is in a Special Flood Hazard Area, a borrower and lender may appeal to FEMA. The borrower and lender must jointly request FEMA's review of the determination. The request must be supported by technical information used when making the determination related to the building or mobile home.

### ACTIONS

The final rule for FEMA's Review of Determinations for Required Purchase of Flood Insurance was published in the Federal Register on December 5, 1995, with an effective date of January 2, 1996. The period for comments on the proposed rule ended on August 14, 1995.

## *Penalties for Failure to Require Flood Insurance or Notify (Section 525)*

### SUMMARY

Civil penalties may be imposed on Federally-regulated lenders and Government-Sponsored Enterprises (GSE's) for housing that have a pattern of non-compliance with flood insurance requirements, notification, escrow, and placement and maintenance of flood insurance. The penalties are $350 for each offense, up to a maximum of $100,000 in any given year. The penalties will be deposited in the National Flood Mitigation Fund, established by the Act, and will be used to support the Mitigation Assistance Program established under Section 553.

### ACTIONS

FEMA is coordinating with regulators about the enforcement of the penalties, the procedures of depositing monies collected into the National Flood Mitigation Fund (NFMF), and the reporting requirements.

## *Notice Requirements (Section 527)*

### SUMMARY

Federally-regulated lenders and Federal agency lenders are required to notify, in writing, the purchaser or lessor that a property is in a Special Flood Hazard Area in advance of signing the purchase agreement or lease. Lenders must inform FEMA or its designee of the change of servicer of a loan made in a Special Flood Hazard Area within 60 days after the effective date of the change. FEMA is to notify the policyholder and the servicer of the loan 45 days before the renewal date of the policy.

### ACTIONS

FIA is coordinating with regulators to determine appropriate procedures for banking institutions to report to the Director of FEMA, or designee, a change in servicer. In the interim, a change of servicer or the selling or transfer of a loan must be reported to the agent or insurance carrier that wrote the flood insurance policy. The lending institution that initiates the above changes is responsible for reporting this information within 60 days.

FIA issued a directive to Write Your Own insurance companies and the NFIP Servicing Contractor to issue a renewal notice to policyholders and to the servicers of the loans.

## *Standard Flood Hazard Determination Form (Section 528)*

### SUMMARY

FEMA is to coordinate with the Federal regulators to develop a Standard Flood Hazard Determination Form to record if a building or mobile home is located in an identified Special Flood Hazard Area and if flood insurance is available. The intent of the form is to identify buildings located in a Special Flood Hazard Area and ascertain the availability of flood insurance. The form will assist Federal entities for lending regulation in ensuring compliance with the mandatory flood insurance purchase requirements. The SFHDF does not replace the lender's written notification to the borrower about disaster assistance.

### ACTIONS

FEMA issued a final rule, published in the Federal Register on July 6, 1995, regarding the Standard Flood Hazard Determination Form. Federal regulators also issued their final rule, mandating use of the form by the lenders, effective January 2, 1996.

### *Examinations Regarding Compliance by Lenders (Section 529)*

#### SUMMARY

Federal banking agencies and the National Credit Union Administration must assess lender compliance with flood insurance requirements during scheduled inspections and must report their findings to Congress one year after the date of enactment and biennially thereafter for the next four years. Section 529 also amends the Federal Housing Enterprises Financial Safety and Soundness Act of 1992 to require the Director of the Office of Federal Housing Enterprise Oversight of the Department of Housing and Urban Development to determine whether the member enterprises have established adequate procedures to comply with the requirements of the Act based upon these aforementioned reports to Congress.

#### ACTIONS

FIA met in December 1994 with regulators and the National Credit Union Administration to establish ways to measure compliance as required by law.

Some agreement was reached at a January 26 and 27, 1995 workshop. FEMA will determine whether it, as well as the regulators, is required to report to Congress about compliance with the Act. If required, FIA will make formal written requests of the regulatory agencies for needed data and the agencies will comply with FIA's requests.

FIA participated in the Annual Examiners Conference of the Farm Credit Administration on September 19–20, 1995, to discuss the Act and the NFIP. There were 250 examiners in attendance at the conference.

FEMA plans to conduct training sessions for regulators and their examiners.

## SUBTITLE C

### *Community Rating System (Section 541)*

#### SUMMARY

NFIRA codifies the Community Rating System (CRS), establishes objectives for CRS, and directs that credits may be given to communities that implement measures to protect natural and beneficial floodplain functions and manage the erosion hazard. FEMA must report to Congress within two years.

The CRS is an incentive program whereby communities that exceed the minimum requirements of the NFIP secure reductions in the flood insurance premiums for their residents. As of Oct. 1, 1995, more than 800 communities were participating in CRS. The policies in the CRS communities represent 62 percent of all NFIP flood insurance policies currently in place.

#### ACTIONS

A comprehensive nationwide CRS evaluation is currently underway. It involves written surveys provided to local officials, phone interviews, case studies, and input from State floodplain management agencies. Data will be reviewed in 1996 with a report to Congress scheduled for September 1996, two years after passage of the NFIRA. Surveys have been mailed to local officials of CRS participating communities.

## SUBTITLE D

### *Repeal of Flooded Property Purchase and Loan Program (Section 551)*

#### SUMMARY

Section 1362 of the National Flood Insurance Act of 1968, Property Purchase Program (the acquisition of substantially or repetitively flood-damaged structures) is repealed. The Mitigation Assistance Program, Section 553, replaces Section 1362 Flood Damaged Property Purchase Program.

#### ACTIONS

All applications approved prior to the repeal date are being closed out.

### *Termination of Erosion-Threatened Structures Program (Section 552)*

#### SUMMARY

The Upton-Jones program, which under the Standard Flood Insurance Policy, provided relocation or demolition benefits for properties in imminent danger of collapse from erosion, was terminated with a 1-year transition phase from Sept. 23, 1994 to Sept. 23, 1995.

The Mitigation Assistance Program, Section 552, replaces the Upton-Jones acquisition/demolition program for buildings threatened by erosion.

#### ACTIONS

All applications approved prior to the repeal date are being closed out.

### *Mitigation Assistance Program (Section 553)*

#### SUMMARY

FEMA is to provide grants to states and communities based on a 75 percent/25 percent cost share for mitigation plans and projects. Eligible project activities include: acquisition and relocation; elevation; floodproofing; demolition; small structural works that do not duplicate other agencies' programs (e.g. no major levees); beach nourishment; and technical assistance. States and communities must have an approved flood mitigation plan before they can be eligible to receive project grants.

#### ACTIONS

FEMA has been receiving input on the Flood Mitigation Assistance Program (FMAP) as progress is made to coordinate the development of the FMAP with a revision of the existing Hazard Mitigation Grant Program. Significant effort has been made to have the two programs complement one another and maximize mitigation gains.

Draft regulations have been prepared and are currently being circulated for internal FEMA review. The regulations will then be forwarded to the Office of Management and Budget (OMB) for review and comment prior to publication in the Federal Register. The Interim Final regulations are expected to be published in August of 1996. Planning and project grants will be awarded later in the year. When the Interim Final regulations for the FMAP are published, they will be effective, although comments will be accepted and considered when the regulations are later finalized.

### *Additional Coverage for Compliance With Land Use and Control Measures (Section 555)*

#### SUMMARY

This section provides insurance protection to cover the cost to repair and reconstruct substantially damaged or repetitively flooded structures and comply with floodplain management regulations. This coverage is referred to as mitigation insurance.

#### ACTIONS

FEMA has met with the Association of State Floodplain Managers.

FEMA is presently doing actuarial studies for pricing information.

FEMA is drafting the coverage provisions.

FEMA is exploring other aspects of this coverage such as a cap, which would be the maximum amount of coverage to an individual and the relationship of this to the other coverage limits.

FEMA plans to have mitigation insurance effective April 1, 1997.

## SUBTITLE E

### *Flood Insurance Interagency Task Force (Section 561)*

#### SUMMARY

A 10-member task force was established to perform studies and make recommendations on compliance with the mandatory flood insurance purchase requirements. The task force's findings will be reported to Congress.

#### ACTIONS

Task force meetings, chaired by the Federal Insurance Administrator, were conducted on March 30, July 13, September 22, and December 14, 1995.

*Task Force on Natural and Beneficial Functions of the Floodplain (Section 562)*

SUMMARY

An interagency task force consisting of the Department of Commerce for Oceans and Atmosphere, U.S. Fish and Wildlife Service, the Environmental Protection Agency, U.S. Army Corps of Engineers, and the Federal Emergency Management Agency, is established to study natural and beneficial floodplain functions that reduce flood related losses and to make recommendations.

ACTIONS

The task force is scheduled to be convened following the release of the Administration's Action Plan responding to the recommendations and goals in two key national floodplain management reports: *Sharing the Challenge, Floodplain Management into the 21st Century,* the report that resulted from a study of the 1993 Midwest Flood, and, *A Unified National Program for Floodplain Management, 1994.*

## SUBTITLE F

*Extension of the NFIP (Section 571)*

SUMMARY

The National Flood Insurance Program is extended through Sept. 30, 1996.

ACTIONS

FEMA is working with the authorizing committees to secure reauthorization for the National Flood Insurance Program.

*Maximum Flood Insurance Coverage Amounts (Section 573)*

SUMMARY

The maximum flood insurance coverage amounts available were increased.

INCREASED FLOOD INSURANCE COVERAGE LIMITS

| Building type | Building coverage | Contents coverage |
|---|---|---|
| Single family | $250,000 | $100,000 |
| 2–4 family | 250,000 | 100,000 |
| Other residential | 250,000 | 100,000 |
| Residential condo (individual) | 250,000 | 100,000 |
| Condo-Master (bldg only $x$ No. units) | 250,000 | 100,000 |
| Commercial (including small business) | 500,000 | 500,000 |

ACTIONS

The Final Rule was published in the Federal Register on Jan. 30, 1995, making the increased coverage limits effective Mar. 1, 1995.

*Updating Flood Insurance Maps (Section 575)*

SUMMARY

FEMA is required to review and assess the need to update and revise Flood Insurance Rate Maps every five years. This section also requires that FEMA provide regular distribution of changes to the maps that are affected by letter, including the publication of a semi-annual compendium of all map revisions.

ACTIONS

A FEMA work group will guide the implementation and oversee the administration of the 5-year map review process.

A subscription service has been established to provide for a semi-monthly distribution of copies of all letter changes to Flood Insurance Rate Maps. There are currently approximately 20 subscribers, and as FEMA continues to improve the services, we expect the number of subscribers to increase. Future plans include offering the subscription service in a digital format.

The second semi-annual compendium of map changes was published on August 31, 1995, for the period of January 1 through June 30, 1995.

In addition to the Compendium and Subscription Service, FEMA provides diskettes with database files containing information about Letters of Map Change upon request.

### *Technical Mapping Advisory Council (Section 576)*

#### SUMMARY

A Technical Mapping Advisory Council is established to recommend improvements to Flood Insurance Rate Maps.

#### ACTIONS

Letters of appointment were sent to members of the Council. An informal meeting of the Council was held at the 1995 National Mitigation Conference in December. The first official meeting was held on May 2 and 3, 1996. A meeting via teleconference is scheduled for July.

### *Evaluation of Erosion Hazards (Section 577)*

#### SUMMARY

Requires that FEMA conduct an economic impact analysis of erosion hazard areas and their impact on the National Flood Insurance Program, its policyholders, and communities prone to erosion. To conduct this study, the Act states that FEMA "may map a statistically valid and representative number of communities with erosion hazard areas throughout the United States, including coastal, Great Lakes, and, if technologically feasible, riverine areas."

The study will be conducted in three phases. Phase one requires FEMA to map coastal erosion hazard areas for 26 coastal and Great Lakes counties. Phase two requires FEMA to conduct an inventory of structures located in the mapped erosion hazard areas. Phase three requires FEMA to conduct, through a "private independent entity," an economic impact analysis of mapping erosion hazard areas.

#### ACTIONS

A study is currently being conducted to determine a statistically valid and representative number of coastal communities to be mapped under phase one of the study. State Coastal Zone Management (CZM) Agencies are assisting FEMA in this effort.

FEMA recently initiated a 5-month pilot study of the economic impact of mapping erosion hazard areas for Sussex County, Delaware. The results of the expedited and localized study (which considers all three phases of the analysis) will be used in the development of the Statements of Work for phases two and three of the national study. The Sussex County study is scheduled to be completed by August of 1996.

FEMA' intends to contract directly with State CZM agencies to conduct phase one of the study (i.e., mapping erosion hazard areas). FEMA has recently initiated the first erosion mapping studies—two counties in New York and one in Delaware. Nine additional mapping studies (six States) started during the second quarter of fiscal year 1996. The remainder of the county-wide studies (fourteen) were initiated during the second and third quarters of fiscal year 1996.

FEMA expects to initiate phase two of the study in fiscal year 1997 (using a national A&E firm), and phase three in fiscal year 1997 (using a congressionally mandated "private independent entity"). These phases will also be conducted in close cooperation with State CZM agencies.

### *Study of Economic Effects of Charging Actuarial Rates for Pre-FIRM Structures (Section 578)*

#### SUMMARY

FEMA is required to study the economic impacts of charging actuarial rates to pre-FIRM structures. The study is to include: the number and type of properties affected; the effects that the increases would have on land values, the economy, and the homeowners; and the amount of premium to be charged.

#### ACTIONS

FEMA hopes to award a contract in June. The study's scheduled completion is within nine months of the date of the award. The target for submitting the report to the Congress is 1997.

### *Effective Dates of Policies (Section 579)*

SUMMARY

The waiting period from the time all obligations have been met (premium payment and completed application) for flood insurance coverage was increased to 30 days. There are two exceptions.

1. An initial purchase of flood insurance in connection with the making, increasing, extending, or renewing of a loan. In this case, there is no waiting period.
2. An initial purchase of flood insurance within one year of a map revision. In this case, the policy would go into effect at 12:01 a.m. the day after the application is made and payment is received.

Another provision of the law calls for a study of the effect of the increased waiting period.

ACTIONS

The Final Rule was published in the Federal Register on Jan. 30, 1995 making the increased waiting period effective Mar. 1, 1995.

FEMA submitted a report to Congress on Mar. 28, 1995 about the projected effect of the increased waiting period. FEMA will follow-up with another report to Congress with information based on flood events once the new waiting period has been in effect for 1 year.

On December 5, 1995, FEMA published NFIP Policy Issuance 8–95, on the 30-Day Waiting Period. The policy issuance provides an interpretation of the 30-Day Waiting Period, delineating the 4 exceptions.

### *Agricultural Structures (Section 580)*

SUMMARY

This provision gives states or communities the option of either (1) exempting agricultural structures that have been damaged by flooding from floodplain management regulations, or (2) requiring that these structures be wet floodproofed, dry floodproofed, or elevated.

Under the Act, the Director must either deny flood insurance to agricultural structures that are not wet floodproofed or otherwise protected, or charge actuarial rates.

This section also prohibits disaster relief for agricultural structures that have been damaged in communities that exempted all or some of these structures from floodplain management regulations. This section does not apply to new or substantially improved agricultural structures. It only applies to structures damaged after the date of enactment of this Act.

ACTIONS

The Mitigation Directorate has initiated a study to determine whether agricultural structures can be wet floodproofed (permanent or contingent measures applied to a structure that prevent or provide resistance to damage that allows flood waters to enter the structure).

The goal of the study is to identify the types of agricultural structures for which wet floodproofing is a technically and economically feasible means of providing flood protection, to define the flooding conditions under which wet floodproofing can be successfully employed; and to develop recommendations regarding specific wet floodproofing techniques and their application to agricultural structures and their contents.

The research team conducting this study includes engineers with training and professional experience in agricultural, structural, and civil engineering and experts in floodplain management and floodproofing.

Once the study is completed, FEMA will use the findings to determine to what extent wet floodproofing can be included in the NFIP Floodplain Management Regulations. Concurrently, FEMA will determine the appropriate flood insurance rates for agricultural structures that can be wet floodproofed under the NFIP. Any proposed changes in the NFIP Regulations will occur through the formal rulemaking process that provides for a public review and comment period.

### *Prohibited Flood Disaster Assistance (Section 582)*

SUMMARY

Individuals in Special Flood Hazard Areas who received disaster assistance after September 23, 1994 for flood disaster losses to real or personal property must purchase and maintain flood insurance coverage. If flood insurance is not purchased and maintained, future disaster assistance will be denied.

The requirement to maintain flood insurance coverage stays with the structure that received disaster assistance as a result of flood damage. If the structure is sold, the current owner is required to notify the buyer of the house of the need to purchase and maintain flood insurance. If the buyer is not notified, suffers uninsured flood losses, and receives Federal disaster assistance, the seller may be required to repay the government any Federal disaster assistance the buyer received.

### ACTIONS

An interim final rule for the Individual and Family Grant program was published in the Federal Register on Feb. 7, 1995. The rule requires that recipients of Federal disaster assistance for buildings in a Special Flood Hazard Area purchase and maintain flood insurance coverage as long as they live in the dwelling.

### OPERATING PROGRAMS—CHANGES FROM FISCAL YEAR 1996

*Question.* FEMA's operating program budget (Salaries & Expenses, and Emergency Management Planning & Assistance accounts) proposes several redirections of resources, with overall resources declining by about $6 million below the fiscal year 1996 amount. Programs proposed for significant increases include hazardous materials grant funding to the States (+$3 m), State hazard mitigation officers (+$3 m), and the hurricane program (+$3 m). Programs slated for decreases include the earthquake (−$1.23 m), State and local assistance (−$2.27 m), radiological defense program elimination (−$1.2 m), replacement equipment for the mobile emergency response system (−$495 k), various fire programs (−$1.4), underground storage tank cleanups (−$4 m), and streamlining the FEMA switched network (−$1 m).

How did FEMA make decisions on "investments" and "disinvestments" and did FEMA apply any risk assessment methodology to facilitate these decisions?

Answer. As part of the Agency's 1997 budget development process, each budget activity received a pro rata share of a 3 percent reduction to the 1996 congressional request level (without the anti-terrorism amendment and in line with the outyear targets identified in the 1996 President's Budget) with guidance to apply the reductions using tools such as NPR II, eliminating one-time increases, etc. FEMA then convened its internal Budget Review Group, composed of senior management officials from Headquarters and the regions and a labor representative, to review the proposals. The Budget Review Group accepted many of the proposals, added some of its own, adjusted some of the discretionary ceiling among accounts based on Agency priorities and made recommendations to the Director. The budget was then submitted to the Office of Management and Budget, which made no changes to FEMA's requested level for operating programs.

*Question.* How did FEMA decide that funding for the hurricane program ought to be a higher priority than the earthquake program?

Answer. Working within existing budget constraints, FEMA is seeking to direct available resources to those areas that we consider vital to the establishment of mitigation practices to reduce or eliminate the long-term risks to life and property from various hazards. An area chosen for enhancement in order to address identified weaknesses is hurricane preparedness. The majority of funding will take the form of grants to States available under the Performance Partnership Agreements to support activities that will result in permanent or long-term reduction of the overall risks of hurricanes.

*Question.* What are the ramifications of reducing funding for the earthquake program by $1.23 million?

Answer. We do not currently foresee any serious ramifications from the $1.23 million reduction that was necessary in order to address other critical Agency requirements. We will reevaluate funding in areas of guidance and standards development, the earthquake loss estimation methodology, financial assistance to the States and education, awareness and outreach programs to determine how reductions can be made without serious harm to the overall earthquake program.

### MERS REDUCTION

*Question.* FEMA's budget proposes a reduction of $495,000 from the mobile emergency response system (MERS). What are the implications of this reduction? How important is the MERS system to FEMA's disaster response capabilities?

Answer. The proposed reduction of $495,000 from the MERS budget will delay the replacement or upgrade of certain MERS equipment. Designed and purchased during the early- to mid-1980's, MERS equipment suffers from years of use, a lack of manufacturer/vendor support, and outdated technology. Due to the funding reductions, FEMA is implementing a phased approach to the replacement or upgrade of MERS equipment and vehicles.

FEMA is conducting a study of the baseline capabilities of the MERS. This study will examine the status of each piece of equipment, its projected life-span, and when it will need to be replaced. The study will also review our current capabilities and our projected requirements as we move into the twenty-first century. We expect this study to be completed by the end of calendar year 1996.

The MERS are valuable assets to FEMA's disaster response mission. Since 1990, MERS personnel, equipment, and vehicles have supported efforts in the response to thirty-five (35) disasters. In fact, portions of the MERS assets are in almost constant use around the country.

## ANTI-TERRORISM

*Question.* Last year, the administration submitted an amendment to FEMA's budget, requesting additional funds for anti-terrorism activities. Because of the timing of the budget amendment, coupled with our budgetary constraints, it was not possible to provide the $10 million request, and instead we urged the agency to reprogram funds for these activities. Did or will such a reprogramming occur, and can you explain what the agency is doing with respect to the administration's anti-terrorism initiative?

Answer. Terrorism is one of many hazards facing the emergency management community, and many of the capabilities established for other disasters, such as hazardous materials accidents, hurricanes, and earthquakes are applicable to terrorist instigated events.

However, because terrorism does present some unique planning and response challenges, we have reprioritized staff and contract support to provide additional assistance in this area.

In 1996 FEMA is addressing certain aspects related to terrorism through its normal planning and preparedness activities, and out of our current operating budget. These include physical enhancements to facilities, increases for security guard services, and additions/modifications to emergency management curricula, such as the National Fire Academy's "Fire Department Operations at Natural and Man-Made Disasters" course.

Staff are being used to support State workshops and training sessions targeted at building awareness of the terrorism hazard and promoting joint planning among elements that would respond to the consequences of such an event (emergency management, fire, police, public health, etc.). Staff are also involved in pilot testing and refining a software program to provide responders with information on chemical and biological agent characteristics and treatment.

New initiatives in fiscal year 1996 include the development of tabletop exercises for senior FEMA management and States and localities; a major initiative with the National Governor's Association to work with 20 States in assessing State and local capabilities to respond to a terrorist incident; and a number of training activities focusing on the terrorism hazard, including several Integrated Emergency Management Courses with terrorism scenarios. Additionally, at the direction of the President, FEMA is working with other Federal departments and agencies to assess and identify the shortfalls in the Federal government's ability to respond to potential terrorist incidents. Through the Federal Response Plan (FRP) community, FEMA has prepared and submitted an extensive readiness report to the President as directed.

In a terrorist event, FEMA's role would be limited to consequences management; FEMA would work with the rest of the Federal community as it would in any other incident, by activating the FRP. Utilizing the FRP, FEMA will coordinate the activities of 28 Federal departments and agencies and the American Red Cross to:

—Provide immediate emergency response and consequence management to save lives, alleviate suffering, and limit property damage; and,

—provide timely and tailored Federal relief to the affected State and local communities and augment State and local emergency management resources.

## HAZARD MITIGATION OFFICERS

*Question.* Your budget proposes $3 million for state hazard mitigation officers, yet it appears on page S–29 of the justification that only $2.5 million of the $3 million would actually go to the states. Why is $500,000 retained by the agency? How will these funds be used?

Answer. FEMA would use the $500,000 retained by the Agency to provide national training and professional development materials and activities for State Hazard Mitigation Officers. Examples of the types of projects to be funded include:

—An annual training workshop for State mitigation officers at FEMA's Emergency Management Institute;

—Guidelines for establishing and maintaining a State interagency hazard mitigation coordination committee; and

—Suggestions for identifying creative resources for nonfederal matching funds for Federal grant programs.

### ADDITIONAL STAFF

*Question.* Additional staff. Your budget proposes additional staff, over the 1995 level, for the Offices of Congressional and Legislative Affairs, Information & Public Affairs, and National Security Coordinator. Please explain why these additional staff are needed.

Answer. In most instances these staff increases represent slight increases for staff offices that have been traditionally understaffed.

—The Office of Congressional and Legislative Affairs (OCLA) routinely works with multiple authorizing committees and coordinates the staffing of multiple disaster field offices and the briefings for Washington staff. Given the volume, and scope, of disasters over the past few years the staff needs to be supplemented in order to meet the disaster needs as well as giving appropriate attention to FEMA's array of non-disaster responsibilities and the Office's own legislative tasks. To provide some perspective on the volume it is useful to consider that from October of 1995 through May of 1996, 504 Congressional Offices were affected (and thus had contact with OCLA) by disaster declarations. This particular position is intended to bolster the office's legislative staff and work on issues of reauthorization and related matters, as well as the shared disaster workload.

—The position added to the Office of Emergency Information and Public Affairs staff will assist with the increased workload resulting from an expansion of services. This office now manages FEMA's World Wide Web site on the Internet. With nearly 4,000 files posted, this site has been accessed 5 million times since May, 1995. During major disaster response and recovery operations, the Internet has become an increasingly important communications medium. Many users have indicated they prefer to receive FEMA disaster information via the Internet. It is available 24 hours a day and is unfiltered by other media.

—The additional positions for National Security Advisor listed in the fiscal year 1997 budget reflected a shift within the Agency. It was planned to shift six staff members with resources preparedness responsibilities from the Preparedness, Training and Exercises (P,T&E) Directorate to the Office of National Security Coordination to serve as the focal point on terrorism.

Based on a full year of experience associated with implementing the President's directive on counterterrorism policy, FEMA has concluded that the relocation of these personnel is no longer considered necessary. Therefore, the six staff members will remain in P,T&E and the staffing level for the Office of National Security Coordinator will remain at 15.

*Question.* FEMA has relied on temporary disaster assistance employees to execute FEMA disaster assistance programs following major disasters in recent years. What types of training programs do you have in place for such employees? How many temporary employees do you currently have? How many of these temporary employees assisted in previous disasters?

Answer. FEMA has approximately 8,000 disaster employees on its rolls available for deployment, who are either given temporary or intermittent appointments. Of those an average of approximately 2,500—3,000 in a twelve month period may actually be working at any given time in response to Presidential disaster declarations. We maintain more employees than actually work because intermittent employees, are not always available for immediate deployment when we need them; therefore, we maintain extra reserve forces.

FEMA provides extensive training to enable the Disaster Assistance Employees to perform a wide range of jobs in the delivery of disaster assistance. These jobs include informing the public about assistance available to them through the media and community visits, processing applicant requests for assistance, conducting inspections of damaged property, counseling those experiencing disaster-related stress, performing emergency support functions, and ensuring that FEMA's equal rights mission is met. To meet the diverse needs for training, FEMA offers courses at its fixed training sites, at the FEMA Regional Offices, at the National Processing Service Centers, and at the disaster sites. A few examples of the training include Public Assistance Inspector, Quality Control Inspector, Mission Assignment Coordinator, State Donations, and training for cadres such as Stress Management, Public Affairs, etc.

### CSEPP STAFFING LEVELS

*Question.* There was an increase of 9 staff in fiscal year 1996 from the fiscal year 1995 level for the Chemical Stockpile Emergency Preparedness Program (CSEPP). Please explain why this increase occurred.

Answer. In 1995, because of lags in hiring, FEMA did not use the full 42 workyears allowed it for CSEPP under the Joint Memorandum between Army and FEMA. This includes 26 positions in the FEMA Regions, 10 at FEMA Headquarters, and 6 to support the CBDCOM CSEPP office in Aberdeen, Maryland. However, the program is expected to operate at its full authorized strength of 42 workyears in 1996 and 1997.

### COMMUNITY DISASTER LOANS

*Question.* What is the status of the Virgin Islands request for a community disaster loan? When does FEMA anticipate transferring funds from disaster relief fund to the CDL account to make such a loan? Are there loan requests pending? Of all the CDL's issued to date, what percent have been forgiven and what percent have been repaid? Should this program be eliminated given the very high loan forgiveness rate?

Answer. In the absence of published financial statements by the Government of the Virgin Islands (GVI), FEMA conducted an on-site visit in February of 1996. The purpose of this visit was to evaluate the size of the GVI's operating budget, and to determine the degree of financial need of the Territory. Based on the information obtained during this visit, FEMA determined that the VI's demonstrated financial need exceeded 25 percent of the operating budget for the fiscal year of the disaster, the maximum amount allowed by the Stafford Act. Therefore, in anticipation of approving a Community Disaster Loan (CDL), a set of terms and conditions for the new loan was presented to the GVI on May 8, 1996. The terms and conditions specify the degree of financial record-keeping relating to drawdowns, disbursement and expenditure of funds that the GVI must maintain in order to qualify for future receipt of funds. Once the GVI agrees to the terms and conditions, a loan will be approved by FEMA. It is anticipated this will occur in June of 1996.

There is currently one pending loan application from the North Coast Railroad Authority of Eureka, California. The loan, in the amount of $615,658, is being processed by FEMA and is expected to be approved in the near future.

To date, a total of fifty-four (54) CDL's have been approved. Of these, twenty-seven (27) loans either have been repaid or FEMA has received an Application for Cancellation. Repayments to date total $2,822,104. With the proposed $18.2 million cancellation of the Virgin Islands' loan for Hurricane Hugo, a total of $22,065,342 out of a possible $57,283,989 in principal has been forgiven, resulting in a forgiveness rate of 38.52 percent. Two additional communities are in the process of repaying the uncanceled portion of their loans, and the Virgin Islands has not as yet been requested to begin repaying the $31,872,079 in uncanceled principal on their loan for Hurricane Hugo.

FEMA's current calculation of the subsidy rate for the CDL program, based on actual and anticipated cancellations and net present value of cashflows, is 87.26 percent, effectively making the CDL program a grant program. If FEMA were either to eliminate the program or administer it as a grant program, it would require much less administrative effort and resources. The 1997 budget requests no subsidy or loan authority for the CDL program.

### FEMA RESTRUCTURING

*Question.* FEMA Restructuring. As part of the administration's "reinvention" initiatives, FEMA proposed "to produce and implement a regional office strategic restructuring plan to advance performance partnerships, improve program delivery, accomplish agency mission priorities, strengthen and revitalize FEMA's field resources, improve implementation of FEMA programs, and reduce operating costs." (Source: FEMA NPR II report, March 1995). What is the status of this restructuring plan?

Answer. FEMA has completed its "Strategic Staffing Plan" initiative related to the Regional Offices. The plan confirms the need for 10 Regional Offices but identifies functions which can be concentrated within a specific Regional Office to support other Offices in a "Territory."

Regional Offices are grouped to form 3 national "territories" in the eastern, middle and western United States. There is no formal organizational or structure associated with a "territory" designation—only mutual support arrangements. For example, within a territory one Regional Office might have more experience with disaster response because States in that region are more prone to disasters. Another Regional Office with less disaster response activity would focus on disaster closeout services. Working together, the two Regional Offices can do what they do best in support of each other. Under the territory concept Agency resources will be better utilized while enhancing our performance.

*Question.* Also as part of "NPR II", FEMA proposed to develop a long-term strategic plan, including a comprehensive review of the agency's mission and function, completion of a skills analysis of all employees, and development of criteria for determining appropriate use of contractual versus staff resources. What is the status of this effort?

Answer. FEMA produced its first Strategic Plan in December 1994. That document guides FEMA's reinvention and improvement activities. FEMA's Staffing Plan focused primarily on aligning FEMA's personnel resources with its strategic priorities and reinvention efforts at the major organization level (i.e., Directorates, Offices, and Regional Offices). The agency has not yet initiated a "strategic" level analysis of needed skills or contracting-out functions across the entire agency.

*Question.* Is FEMA's fiscal year 1997 budget request predicated on preliminary strategic planning efforts?

Answer. Yes, FEMA's 1997 budget identifies program activities to be accomplished and corresponding performance measures that support many of the goals and objectives included in the Agency's strategic plan

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## QUESTIONS SUBMITTED BY SENATOR KERREY

### HAZARD MITIGATION GRANT PROGRAM

*Question.* Nebraska's emergency management officials have expressed concern that national standards are lacking for flood mitigation projects. Specifically, Nebraska officials cite inconsistencies in implementing mitigation policies and procedures between FEMA Headquarters and Regional offices. Further, local governments charge that while applications for structural flood control projects were pending review, FEMA announced it would no longer fund such projects. As a result, local governments incurred expenses preparing applications for projects that are now declared ineligible for funding. Local officials express concern that the lack of a timely mitigation project review process has cost applicants money. How does FEMA plan to address these concerns?

Answer. The purpose of the Hazard Mitigation Grant Program, which emphasizes non-structural mitigation measures, is to assist State and local governments to permanently reduce both loss of life and property from natural hazards through safer building practices and improving existing buildings and supporting infrastructure. Some examples of quality mitigation projects include:

—Public acquisition of flood-prone or damaged properties and reversion of the land to open space use; seismic rehabilitation of buildings; elevation of flood-prone buildings above anticipated flood heights; and installation of roof clips in hurricane or tornado prone areas.

—Although structural flood control projects are currently listed as an eligible type of project in the regulations for the Hazard Mitigation Grant Program, in most cases non-structural alternatives (acquisition, elevation, retrofitting) will be more cost-effective, have fewer environmental impacts, and will not cause negative downstream hydraulic impacts compared with structural alternatives. In the aftermath of major floods, FEMA's goal is to promote non-structural mitigation as the leading hazard mitigation alternative in the recovery from a flood.

—Because funds under the Hazard Mitigation Grant Program are competitively awarded, there are no assurances that eligible projects will be approved, and therefore monies spent on the preparation of an application may not be recovered.

—Lastly, FEMA is always working to improve the delivery and project approval process of the Hazard Mitigation Grant Program. Currently, improvements include: revising the Hazard Mitigation Grant Program regulations to clarify eligibility requirements, training for FEMA Regional and state staffs on environmental requirements which must be met for the Hazard Mitigation Grant Program, and training for FEMA Regions and states on a new benefit-cost analysis computer tool to speed Hazard Mitigation Grant Program project evaluation and funding.

### FUNDING FOR EMERGENCY OPERATING CENTERS AND OTHER STATE REQUIREMENTS

*Question*. How will state and local officials be ensured input into the federal budget to identify their needs? In the past, Congress has provided funding for such requirements as warning sirens, Emergency Operating Center (EOC) construction/rehabilitations (F&E—Facilities and Equipment). How will these or other items be funded in the future?

Answer. Beginning in 1996, the Federal Emergency Management Agency (FEMA) has initiated a new approach to provide funding to State and local governments for emergency management purposes. Under the Performance Partnership Agreements (PPA), funds previously earmarked for specific categories of activity, such as those cited in the question, are incorporated into a more generic State and Local Assistance (SLA) grants, which will be used to best address a State's specific hazards, needs and priorities.

Under the PPA process, a Cooperative Agreement (CA) is negotiated annually between each State and its FEMA Region as to what functions will be funded. Following this new approach, State and local governments will no longer apply to FEMA for specific F&E or EOC grants, and States are afforded greater discretion and flexibility for the use of SLA grants for emergency management purposes in general.

FEMA's Regional Directors are currently engaged in negotiations with the States for funding of their proposed Cooperative Agreement (CA) for fiscal year 1997, which begins on October 1, 1996.

### DISTRIBUTION OF FUNDS

*Question*. As the federal FEMA office moves toward delegating increased authority to the Regional offices, how will FEMA ensure a fair and balanced distribution of funds, policies and procedures to all states. Nebraskans express fear that small rural states such as ours will lose out when limited federal government resources are distributed. How does FEMA plan to address this issue?

Answer. The authority for the establishment and carrying out of policy and procedures relative to the allocations of appropriated funds remains in FEMA Headquarters, and reflects the Agency's national emergency management goals.

### TRANSPORTATION OF NUCLEAR WASTE

*Question*. The Nuclear Waste Policy Act of 1982 and proposed amendment (S. 1271) authorize funding and technical assistance for states to prepare for the transportation of high-level nuclear waste through their state. Is FEMA involved with the planning and/or implementation of Federal assistance to states in regard to the transportation of high level nuclear waste? If so, how are those activities coordinated with the Department of Energy?

Answer. The Department of Energy (DOE) has lead responsibility for Nuclear Waste Policy Act (NWPA) implementation. FEMA responded in May of 1995 to the Department of Energy Notice of Inquiry dated January 3, 1995, requesting recommendations for implementation of the NWPA Section 180(c) program. In that official response, the FEMA Director expressed his firm commitment and the commitment of FEMA to fostering a cooperative and productive partnership with DOE for program implementation. Our comments stressed FEMA's role in assisting State, Tribal, and local governments in preparing for and responding to disasters.

On May 16, 1996, DOE's Office of Civilian Radioactive Waste Management published for public comment (FRN citation: vol 61, No. 96), a proposed policy statement setting forth its plans for implementing a program of technical and financial assistance to States for training public safety officials of appropriate units of local government and to Indian tribes through whose jurisdiction the Department (DOE) plans to transport spent nuclear fuel or high-level radioactive waste. The training would cover both routine transportation procedures and emergency response procedures.

FEMA will continue to support DOE and the States involved through Federal interagency bodies including the FEMA-chaired Federal Radiological Preparedness Coordinating Committee (FRPCC), and through the grants to States provided by FEMA for preparedness efforts, including training.

## SUBCOMMITTEE RECESS

Senator BOND. I thank you very much for the testimony, and we look forward to continuing to work with you as you implement these reforms. We wish you well, and we hope you have a year in which you can spend all your time on administrative details and not out responding to disasters.

Mr. WITT. Thank you, Mr. Chairman.

Senator BOND. The hearing is recessed. Thank you.

[Whereupon, at 11 a.m., Tuesday, April 30, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

# DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT AND INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1997

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**FRIDAY, MAY 3, 1996**

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
*Washington, DC.*

The subcommittee met at 9:45 a.m., in room SD–192, Dirksen Senate Office Building, Hon. Christopher S. Bond (chairman) presiding.

Present: Senators Bond, Burns, Stevens, and Mikulski.

## DEPARTMENT OF VETERANS AFFAIRS

### OFFICE OF THE SECRETARY

**STATEMENT OF HON. JESSE BROWN, SECRETARY**

**ACCOMPANIED BY:**

- **HAROLD GRACEY, CHIEF OF STAFF**
- **D. MARK CATLETT, ASSISTANT SECRETARY FOR MANAGEMENT**
- **KENNETH W. KIZER, M.D., UNDER SECRETARY FOR HEALTH**
- **THOMAS L. GARTHWAITE, M.D., DEPUTY UNDER SECRETARY FOR HEALTH**
- **JULE D. MORAVEC, PH.D, VETERANS HEALTH ADMINISTRATION, CHIEF NETWORK OFFICER**
- **C.V. YARBROUGH, VETERANS HEALTH ADMINISTRATION, CHIEF FACILITIES MANAGEMENT OFFICER**
- **W. TODD GRAMS, VETERANS HEALTH ADMINISTRATION, CHIEF FINANCIAL OFFICER**
- **CASEY WICHLACZ, DIRECTOR, MEDICAL PROGRAMS BUDGET OFFICE**
- **R. JOHN VOGEL, UNDER SECRETARY FOR BENEFITS**
- **ROBERT W. GARDNER, VETERANS BENEFITS ADMINISTRATION, CHIEF FINANCIAL OFFICER**
- **JERRY BOWEN, DIRECTOR, NATIONAL CEMETERY SYSTEM**
- **ROGER RAPP, DIRECTOR, OFFICE OF FIELD OPERATIONS**
- **VINCENT BARILE, DIRECTOR, OFFICE OF OPERATIONS SUPPORT**
- **MARY LOU KEENER, GENERAL COUNSEL**
- **WILLIAM MERRIMAN, DEPUTY INSPECTOR GENERAL**
- **CHARLES L. CRAGIN, CHAIRMAN, BOARD OF VETERANS APPEALS**
- **EDWARD P. SCOTT, ASSISTANT SECRETARY FOR CONGRESSIONAL AFFAIRS**
- **EUGENE A. BRICKHOUSE, ASSISTANT SECRETARY FOR HUMAN RESOURCES AND ADMINISTRATION**

**ACCOMPANIED BY—Continued**

**SHIRLEY C. CAROZZA, DEPUTY ASSISTANT SECRETARY FOR BUDGET**

**ROGER BAUER, VICE CHAIRMAN, BOARD OF VETERAN APPEALS**

**DENNIS DUFFY, ASSISTANT SECRETARY FOR POLICY AND PLANNING**

## OPENING STATEMENT OF CHRISTOPHER (KIT) BOND

Senator BOND. Good morning. The subcommittee meets this morning to review the budget request of the Department of Veterans Affairs for fiscal year 1997.

VA's appropriation request totals $38.8 billion, of which $18.89 billion is discretionary spending and $19.9 billion is for mandatory programs. The amount requested for discretionary programs is an increase of approximately $573 million over the current level, including an additional $444 million for medical care and $114 million for major construction.

This morning I note that Senator Stevens has other commitments. I am going to defer the remainder of my opening statement and give Senator Burns and Senator Stevens an opportunity for their opening statements.

## PREPARED STATEMENT

Senator Mikulski is experiencing the same problems I experienced in the traffic this morning. She will be joining us shortly.

[The statement follows:]

### PREPARED STATEMENT OF CHRISTOPHER S. "KIT" BOND

The Subcommittee meets this morning to review the budget request of the Department of Veterans Affairs for fiscal year 1997. VA's appropriation request totals $38.8 billion, of which $18.9 billion is discretionary spending and $19.9 billion is for mandatory programs. The amount requested for discretionary programs is an increase of approximately $573 million over the current level, including an additional $444 million for medical care and $114 million for major construction.

The proposed increase for medical care is close to the Congressionally-approved increase of $400 million in fiscal year 1996—and far less than last year's proposed $750 million increase. Mr. Secretary, it would appear from your budget that despite all the rhetoric, you actually agree that VA's medical budget can stand some reductions to the rate of increase—without compromising the quality of care or denying care to any veterans. And I congratulate you for coming around to that realization.

I'm disappointed the budget does not reflect the cost savings associated with implementing the myriad recommendations made by the GAO and the I.G. to improve care and reduce expenditures, which we referred to on many occasions during debate on the fiscal year 1996 appropriation. But I commend the Department for requesting a budget which reflects the need for VA to restructure.

While the reorganization of the Veterans Health Administration only recently got underway, it appears that this new organization has the potential to bring about improved care at less cost. In a hearing I held earlier this year on the reorganization, we learned that, despite a budget which is less than what was originally requested in fiscal year 1996, despite all the grandstanding and political posturing which occurred for many months, there in fact was good news—veterans are NOT being denied care, and improvements are beginning to be implemented.

Concerns have been expressed to me about the closure of inpatient surgical procedures at the Poplar Bluff, MO, VA hospital, which was announced earlier this week, and questions have been raised as to whether this was politically motivated. Dr. Kizer has indicated that this decision was necessary to ensure that quality of care standards are met. I trust this is the case, and I ask that the Department do everything it can to see that the change in service at Poplar Bluff is handled as carefully as possible, with a minimum of disruption and inconvenience to the facility's patient population and employees.

For major construction, the Department's $250 million budget request demonstrates that despite claims to the contrary, the old bricks and mortar mentality is alive and well at the VA. I'm quite perplexed by the fact that the Department is proposing new hospitals in Florida and California, which we discussed at length last year. The Congress made it quite clear that it would not approve these new hospitals in the fiscal year 1996 appropriation by authorizing and appropriating funds for outpatient clinics at Brevard, FL and Travis, CA.

As you well know, the veteran population is declining, the provision of health care services is shifting dramatically to an outpatient basis, and VA's budget cannot absorb the cost of constructing and operating two new hospitals. Frankly, rather than proposing new facilities, VA should be proposing closures. VA officials have admitted that VA is overbedded, and that far fewer facilities are needed to meet veterans' needs.

Clearly, new hospital construction in the VA is an anachronism, and I do not plan to revisit this in fiscal year 1997. Therefore, I suggest the Department move ahead quickly with the outpatient projects which have been funded, so that the health care needs of veterans in Florida and California can be met as soon as possible.

For the Veterans Benefits Administration, the administration is requesting $643 million, plus reimbursements totaling $186.7 million, which will provide for approximately 12,000 staff, a 5 percent reduction below the current levels.

The Veterans Benefits Administration continues to have many very serious shortcomings, resulting in unacceptable lengths of processing time for veterans claims and a large backlog. While the backlog is coming down and processing time is improving, this appears to be a result of a decline in the number of new claims, not real improvements. In testimony before the Senate Veterans Affairs Committee last week, the Disabled American Veterans stated "regional office quality is not improving, and the Board of Veterans' Appeals backlog is growing to alarming proportions."

VBA's problems include the lack of a strategic plan; outmoded computer systems; a cumbersome, inefficient organizational structure; a reactive rather than strategic approach to decisions rendered by the Court of Veterans Appeals; the lack of coordination with the Board of Veterans Appeals and the Veterans Health Administration; and a culture which seemingly is wedded to the status quo—to name a few.

According to the GAO, in fiscal year 1994, 400 veterans died while awaiting the VA's final decision on a claim.

Over the past several years, VBA's problems have been studied extensively by the General Accounting Office, a 1993 Blue Ribbon Panel, the General Services Administration, the Center for Naval Analysis, and most recently the so-called Melidosian Commission, authorized by the Congress to study the claims backlog problem.

While VBA has several initiatives planned or underway, there still is no overall strategic plan and most of the initiatives have been roundly criticized for a variety of reasons. The proposed changes are tepid, not strategic, long-term reforms.

And while the Department apparently takes pride in the fact that it finally has begun a strategic planning process in VBA, the Melidosian Commission reported that "neither the Veterans Benefits Administration nor the Board of Veterans Appeals has a mature strategic management process to develop strategic goals and objectives; define resource requirements; integrate these into appropriate, reasonable work performance standards; and assess effectiveness in meeting goals and objectives."

They found that while VBA has implemented many of the recommendations of an earlier blue ribbon commission, "VBA had no plan for measuring, tracking, and costing the effect of the initiatives. Consequently, data are not available to accurately determine or reasonably estimate their effectiveness." So while some progress has been made to reduce the backlog, VA can't tell us whether this is a result of overtime, the fact that incoming claims are on a steep decline, or some other factor.

As to VBA's recently announced restructuring of its regional offices, the reactions to this restructuring have been extremely negative. It would appear that VBA's restructuring plans were only an effort to cut the budget, and not part of a long-term strategic effort to improve the way VBA serves veterans.

I am not suggesting restructuring is not needed—VBA has not restructured since the 1950's, and it is questionable whether VA needs 58 regional offices in this information age. But a restructuring must be carefully planned and coordinated with the other initiatives VBA is involved in to address its myriad problems. It can't be just a random office closing exercise.

As you know, the Congress in the fiscal year 1996 appropriations bill commissioned the National Academy of Public Administration to go in and take a comprehensive, objective look at what is needed to improve the way VBA operates. The NAPA review is intended to build upon, not duplicate, the previous analyses. It is intended to make specific recommendations for change. I understand there has been some resistance and even hostility to the NAPA review—but the Department has finally accepted the intent of Congress for this review to go forward. We ask that the Department cooperate with NAPA, so that we may receive their final report in a timely manner.

In closing, Mr. Secretary, it is my sincere hope that we can engage in a constructive dialog this year, unlike last year, about how to restructure and make improvements to VA, both to live within the constraints imposed by our goal of balancing the budget by the year 2002 and to ensure the best possible service to veterans. I hope you'll be willing to tone down the rhetoric and get on with the necessary improvements to your department.

## STATEMENT OF TED STEVENS

Let me turn now to Senator Stevens.

Senator STEVENS. Thank you very much, Mr. Chairman. I appreciate the courtesy of my friend from Montana. I just want to make a short comment, and I will submit some questions for the record, if that is agreeable.

Senator BOND. We will be happy to have those questions.

Senator STEVENS. Mr. Chairman, the Anchorage VA Medical and Regional Office Center is now sixth best nationally in claims completed per staff hour. The compensation and pension [C&P] claims rose 11 percent in Alaska while they decreased nationally 27 percent. These improvements occurred despite the fact that Anchorage only had two of the four staff that should be provided for C&P processing.

There are now over 40 steps involved in the processing of benefit applications, but the VA wants to move these facilities from Alaska to Phoenix and Reno.

The VA telephone lines would shut down at 2 p.m. in Hawaii and 3 p.m. in Alaska. A Hawaiian would have to get up at 5 a.m. to call as the office opened. Alaskans would have to be making the call at 6 a.m.

Now, I have had some conversations before with the VA and the gentlemen that are here this morning; however, I remain totally opposed to the concept of moving C&P's office out of Alaska, thousands of miles away to Reno and Phoenix. I have some specific questions that I would like to have the VA answer on the record.

We have had real problems in other areas. I am pleased to tell the committee that Dr. Kizer, the VA's Under Secretary for Health, traveled to Alaska this last month. He had meetings in Anchorage and in Kenai, and as a result of that visit we have had substantial improvements and changes in the VA operations as far as the health side of VA is concerned.

I hope that the gentlemen will respond to my questions, and perhaps we can get one of them to come and see what the problems are in both Alaska and Hawaii before this plan is finalized. I will submit the questions and I thank you very much for allowing me to make this statement.

Senator BOND. Thank you very much, Senator Stevens. I, too, have some questions about the proposal for Anchorage, and we will ask that the Department respond both to the questions we ask and to the questions you submit for the record.

Senator Burns.

## STATEMENT OF CONRAD BURNS

Senator BURNS. Thank you very much, Mr. Chairman, and I will submit my statement, as I want to hear from the Secretary this morning.

I have been an advocate of downsizing Government, and I have some questions about the way we are doing it with regard—I am going to be very parochial here, and with regard to what is happening in my State of Montana. I have been in contact with the Secretary with letters as to how they are going to restructure the VBA at Fort Harrison in Montana.

My concerns have not been answered to my satisfaction to begin with. It seems that four States, including Montana, were targeted at taking the hits and not necessarily the four offices that were the most efficient.

Now, even the regional offices that are most inefficient, again Fort Harrison is not in that category, it seems to me we are putting the cart before the horse, and it is my understanding that even though I am a great advocate of telecommunications and the way we are going to move information, I understand that the system that we are trying to put in place is not in place and will not be in place until 3 to 5 years, and we are already starting to downsize, and so my questions will be along those lines this morning, as I am concerned about those.

Mr. Chairman, thank you for this statement, and I will submit my full statement for the record, and those questions we do not get answered I will probably have some, so that the Secretary can respond to the committee and to the individual Senators.

[The statement follows:]

## PREPARED STATEMENT OF CONRAD BURNS

Mr. Chairman, I appreciate having this opportunity to talk with Secretary Brown about his budget for fiscal year 1997. As you know, Montana has a very high population of veterans—one in eight Montanans are veterans—and we hear from them regularly. They are concerned with health care, retirement, COLA's, and the strength of the VA and I get the sense that, though many believe in reducing the size of government and restoring common sense to our budget process, they also believe the veterans get the short end of the stick at times.

And so, when I look at the budget before us, I look at it through their eyes. Will they see a decline in services? Will they be able to easily get answers to their questions? Will our promise to them be kept?

As you know, I have been a big advocate of downsizing government, streamlining the bureaucracy and reducing paperwork. I have to congratulate you for taking that challenge to heart. But at the same time, I have some real concerns about the manner in which the restructuring is being carried out.

Mr. Secretary, we have been in contact through letters and through our staff, on the proposal to restructure the VBA at Fort Harrison in Montana. My concerns have not been answered to my satisfaction. To begin with, it seems the four states (including Montana) that were targeted for taking hits are not necessarily the four offices that are the most inefficient. In fact, Ft. Harrison's Compensation & Pension Division was ranked 20th of 58 regional offices on the basis of quality, productivity, timeliness and other costs. They were one of six stations nationwide to receive the maximum rating in Quality. They ranked 23rd of 58 in workload produced versus FTEE—Phoenix, which is proposed to take over Montana's pension cases was ranked 44th. And Ft. Harrison was the fourth lowest in operating costs. These were the rankings used by the VBA Field Restructuring Task Group. Now how can you tell me that Ft. Harrison should be downgraded?

And even for those regional offices that are the most inefficient—and again, Ft. Harrison is not in that category—it seems to me that you are putting the cart before the horse. I pride myself on being a champion of telecommunications. In Montana, it has brought education to students who otherwise wouldn't have access to special courses. It has brought health care services to folks who have no access to specialists. But I will also be the first to tell you that you can't pull out services, no matter how primitive, before an infrastructure is in place to take its place.

It is my understanding that the telecommunications infrastructure you envision to "improve access" will not be in place for, at the very least, 3–5 years. And yet, the reduction in FTE's is already starting. Employees in Ft. Harrison have already been notified that they'll be out of a job shortly.

I am also unclear with the reductions in staff. Out of 16 positions being eliminated at Ft. Harrison, 9 will be added in Sioux Falls for Compensation, 4 will be added to Phoenix for Pensions, with a net savings of 3 FTE's. Would it not be possible to just eliminate 3 FTE's from Ft. Harrison and keep our C&P processing within our state? It would be tough but I know they would continue to serve Montana's veterans just as well.

One of your goals in the restructuring is a greater degree of personalized service. There is nothing more personalized than being able to call your local office, have an employee run down the hall to get your files, and have your concerns addressed by someone who is familiar with your case. By shipping our files to Phoenix and Sioux Falls, our veterans will not only lose the personalized attention, they'll lose efficiency. Time zones will come into play as well.

I am all for improving efficiency and consolidating, Mr. Secretary—don't get me wrong—but not before you can guarantee that services will not be hindered. I heard rumblings recently that implementation of Transition Initiative # 10 (the telecommunication system) will be postponed. I don't know how you can go forth with any of the other nine initiatives without this in place.

I assume you will need funding to put this proposal into play. I strongly encourage you to reconsider moving forward, postponing reductions and restructuring the VBA workforce, until the system to support our veterans is up and running.

On another issue, I am happy to see that once again, you have requested increased funds for VA Medical Care. We have two top-notch Medical Centers in Montana, as you know. We went through a bit of a downgrade some years back at Miles City and they are now using a local hospital for their surgeries. Though I understand that is working well for Eastern Montana veterans, I remain concerned that further changes might be in store as you continue to move services to the population centers.

Billings is our most highly populated city in Montana, but veterans have settled in all across Eastern Montana. Miles City serves over 45,000 veterans in an area that spans nearly 80,000 square miles. Some states here in the east aren't even that big. The vast majority (over 80 percent) reside more than 100 miles from the Medical Center. Billings, though central in the state, is not exactly more convenient for most of those veterans. And, since you visited Miles City in 1993, and know the distance between Miles City and Billings, the conditions of the roads, and the difficulty of travel for many veterans, I would like your assurance that the VAMC in Miles City will remain a full service medical center with the Billings Clinic continuing to provide outpatient services as they have in the past.

Mr. Secretary, I look forward to working with you as we continue to serve our veterans. As a former Marine, I am real sensitive to the promises that our country made those who have served. As long as we are keeping the veteran first and foremost in mind, our efforts to restructure will work. But once you start focusing on the dollar, and the veteran takes a back seat, we've got problems.

Mr. Secretary, I hope you will consider my questions carefully and that we will be able to find an amenable solution. And Mr. Chairman, I appreciate having this opportunity to raise these budget-related concerns. I know there are many other issues that will be raised and I look forward to working with the Committee and the Secretary over the next few months to address these issues.

Thank you.

Senator BOND. Thank you very much, Senator Burns.

Mr. Secretary, let me say that the proposed increase for medical care included in the President's budget for this year is close to the amount which Congress approved in fiscal year 1996, $400 million. It is far less than last year's requested increase of $750 million.

It would appear from your budget that despite all the rhetoric the administration actually agrees that the VA's medical budget can stand some reductions in the rate of increase without compromising the quality of care, or denying care to any veterans, and

I congratulate you for coming around to that realization, and welcome you.

I am disappointed the budget does not reflect the cost savings associated with implementing the myriad recommendations made by the General Accounting Office and the inspector general to improve care and reduce the expenditures, which we referred to on many occasions during the debate on the fiscal year 1996 appropriations.

I do commend the Department for requesting a budget which reflects the need for the VA to restructure. While the reorganization of the Veterans Health Administration only recently got underway, it appears that this new organization has the potential to bring about improved care at less cost.

At the hearing I held earlier this year on the reorganization we learned that, despite a budget which is less than what was originally requested in fiscal year 1996, despite all the grandstanding and political posturing which occurred for many months, there, in fact, was good news. Veterans are not being denied care, and improvements are beginning to be implemented.

## POPLAR BLUFF SURGERY

Concerns have been expressed to me from my home State about the closure of the inpatient surgical procedures at the Poplar Bluff, Missouri VA hospital which was announced earlier this week, and questions have been brought to my attention as to whether this was politically motivated.

Dr. Kizer has indicated to me that the decision was necessary to ensure that the quality of care standards are met, and I trust that is the case.

I ask the Department to do everything it can to see that the change in service at Poplar Bluff is handled as carefully as possible with a minimum of disruption and inconvenience to the facility's patient population and employees.

## MAJOR CONSTRUCTION

Now, for major construction, the Department's $250 million budget request demonstrates that despite claims to the contrary the old bricks and mortar mentality is still alive and unfortunately doing well at the VA.

I am quite perplexed by the fact that the Department is proposing new hospitals in Florida and California, which we discussed at length last year. I thought the Congress made it quite clear that it would not approve these new hospitals in the fiscal year 1996 appropriation by authorizing and appropriating funds for outpatient clinics at Brevard, Florida, and Travis, California.

The decision was made at that time that outpatient clinics would be the appropriate way to go. As you well know, the veteran population is declining. The provision of health care services is shifting dramatically to an outpatient basis, and VA's budget cannot absorb the cost of constructing and operating two new hospitals.

Frankly, rather than proposing new facilities, I think the VA should be proposing closures. VA officials have admitted that the VA is overbedded, and that far fewer facilities are needed to meet veterans' needs. Clearly, new hospital construction in the VA is an anachronism. I do not plan to revisit that in fiscal year 1997.

Therefore, I suggest the Department move ahead quickly with outpatient projects which have been funded so that the health care needs of veterans in Florida can be met as soon as possible.

For the Veterans Benefits Administration, the administration is requesting $643 million plus reimbursements totaling $186.7 million, which will provide for approximately 12,000 staff, a 5-percent reduction below the current levels.

The Veterans Benefits Administration continues to have many very serious shortcomings, resulting in unacceptable lengths of processing time for veterans claims and a large backlog. While the backlog is coming down, and processing time is improving, this appears to be a result of a decline in the number of claims, not real improvements in the processing service.

In testimony before the Senate Veterans Affairs Committee last week, the Disabled American Veteran representative stated regional office quality is not improving and the Board of Veterans Appeals backlog is growing to alarming proportions.

VBA's problems include the lack of strategic plan, outmoded computer systems, a cumbersome, inefficient organizational structure, a reactive rather than strategic approach to decisions rendered by the Court of Veterans Appeals, a lack of coordination with the Board of Veterans Appeals and the Veterans Health Administration, and a culture which is seemingly wedded to the status quo, just to name a few problems.

According to the GAO, in fiscal year 1994, 400 veterans died while awaiting the VA's final decision on a claim. Over the past several years, VA's problems have been studied extensively by the GAO, a 1993 blue ribbon panel, the General Services Administration, the Center for Naval Analysis, and most recently, the so-called Melidosian Commission, authorized by Congress to study the claims backlog problem.

While VBA has several initiatives planned or underway, there still is no overall strategic plan, and most of the initiatives have been roundly criticized for a variety of reasons. The proposed changes are tepid, not strategic, long-term reforms.

While the Department apparently takes pride in the fact that it finally has begun a strategic planning process in VBA, the Melidosian Commission reported that:

> Neither the Veterans Benefits Administration nor the Board of Veterans' Appeals has a mature, strategic management process to develop strategic goals and objectives, define resource requirements, integrate these into appropriate reasonable work performance standards, and assess effectiveness in meeting goals and objectives.

The Commission found that while VBA has implemented many of the recommendations of an earlier blue ribbon commission, VBA still has no plan for measuring, tracking, and costing the effect of the initiatives, and consequently they concluded that data are not available accurately to determine or reasonably estimate their effectiveness, so while some progress has been made to reduce the backlog, VA cannot tell us whether this is a result of overtime, the fact that incoming claims are on a steep decline, or some other factor.

As to VBA's recent restructuring of its regional offices, the reactions to this restructuring have been extremely negative. It would appear that VBA's restructuring plans were only an effort to cut the budget, not part of a long-term strategic effort to improve the way VBA serves veterans.

I do not mean to suggest that restructuring is not needed. VBA has not restructured since the 1950's, and it is questionable whether VBA needs 58 regional offices in this information age, but a restructuring must be carefully planned and coordinated with other initiatives VBA is involved in to address its myriad problems, and it cannot just be a random office closing exercise.

As you know, the Congress in fiscal year 1996 appropriations bills commissioned the National Academy of Public Administration to go in and take a comprehensive, objective look at what is needed to improve the way VBA operates. The NAPA review is intended to build upon, not duplicate the previous analysis. It is intended to make specific recommendations for change.

I understand there has been some resistance and even hostility to the NAPA review, but the Department has finally accepted the intent of Congress for this review to go forward.

We ask that the Department cooperate with NAPA so we may receive their final report in a timely manner.

Mr. Secretary, I might point out that many of the complaints and concerns that we have received about the restructuring come from regional leaders in the VBA organization themselves. While we have seen a recognition by regional officials in the veterans health side that the reorganization there is going forward on a strategic plan, there is grave concern by the people who actually are in the Department that they do not understand or see any strategic plan for the VBA reorganization.

In closing, Mr. Secretary, it is my sincere hope that we can engage in a constructive dialog this year, unlike last year, about how to restructure and make improvements to VA both to live within the constraints imposed by our goal of balancing the budget by the year 2002 and to ensure the best possible services to veterans.

I hope that we can see a tone-down in rhetoric and get on with the necessary improvements in the Department.

With that, it is my pleasure to turn to my ranking member, Senator Mikulski.

## STATEMENT OF BARBARA MIKULSKI

Senator MIKULSKI. Mr. Chairman, thank you. I apologize for being late. I am just going to ask unanimous consent that my statement be in the record.

I know that this will be a very good hearing. I think despite many criticisms about some of its programs the VA has been indispensable in our Nation's veterans programs. We do not want to abandon, ever, that responsibility.

I know the Secretary's budget request is a modest one. That is good news. The bad news is, we are going to have to figure out what is the best way to serve the veterans within those constraints.

Having said that, I think we will move forward and listen to the Secretary and then proceed with our questions and answers.

## PREPARED STATEMENT

I ask unanimous consent that my statement will go into the record.

Senator BOND. That will be so ordered. Thank you very much, Senator Mikulski.

[The statement follows:]

### PREPARED STATEMENT OF BARBARA A. MIKULSKI

Thank you Mr. Chairman. I want to welcome Secretary Brown and his staff accompanying him today. I look forward to hearing the Secretary's statement on his fiscal year 1997 budget request.

We have a sacred contract with our nation's veterans that we cannot break. I know the Secretary is committed to that contract as well—a promise made to veterans must be a promise kept. Despite many criticisms about some of its programs, the Department of Veterans Affairs has become indispensable to our nation's veterans. We can never abandon our responsibility to provide the best possible care and service to our veterans—it is our responsibility to do nothing less.

Unfortunately, we now find ourselves in a situation that forces the VA as well as the Congress to make some difficult decisions regarding funding of veterans programs. The need to cut costs and save money is driving a new agenda for the VA, and we must work to use this situation to our advantage—and to the advantage of our nation's veterans—to institute new solutions and new ideas that improve quality and efficiency while saving money. In addition to being our nation's heroes, our veterans are also taxpayers. We have committed to all our taxpayers that we will achieve budgetary savings.

Your budget request, Mr. Secretary is a rather modest one. That's the good news. The bad news is that the budget constraints that we all faced for fiscal year 1996 will seem like nothing compared to the reductions we will see in fiscal year 1997 and beyond.

As I reviewed the Secretary's prepared statement, I was please to see the emphasis on reengineering and reforms in the VA management structure.

As we discussed with Dr. Kizer at the hearing on March 8, the VA has begun to restructure and decentralize its health care delivery system. I look forward to hearing your thoughts as well, Mr. Secretary, on the impact of those changes in the VA health care system.

I understand that this budget proposal includes the first phase of multi-year restructuring effort for the Veterans Benefit Administration, as well. As you know, Mr. Secretary, I have been concerned about the significant backlog that exists in claims processing and appeals. I look forward to reviewing your plans for improving the operations of the VBA and the Board of Veterans Appeals—improving the services to veterans, while reducing the costs of these programs as well.

I know that the Department of Veterans Affairs has begun to make some changes to become more efficient, and I look forward to hearing about the plans for the coming year. I want a better VA, a more efficient VA, and a VA that takes care of our nation's veterans.

## STATEMENT OF JESSE BROWN

Senator BOND. Mr. Secretary.

Secretary BROWN. Thank you very much, Mr. Chairman. I appreciate this opportunity to present the President's 1997 budget request for the Department of Veterans Affairs.

Last year at this time, I said the President was committed to providing care to veterans, and he has met that commitment by sending good budgets to Congress.

Before I speak on this year's budget, I want to clarify three misunderstandings. The first is that, as the number of veterans declines, the budget for their care should also decline.

Mr. Chairman, between 1992 and the year 2002, we project that the total veterans population will decrease by 12 percent. However, during the same period, the number of veterans seeking care will increase by 15 percent. That increased demand is caused by an aging disabled veteran population.

The second is that the VA's budget just goes up year after year, and we are spending too much to take care of our veterans.

Mr. Chairman, it is true that the VA's health care budget has risen from $5.8 billion in 1980 to $16.5 billion in 1996. However, in constant dollars, after taking out the inflationary cost of medical care, the 1996 budget would be only $6.6 billion in 1980 dollars. That is an increase of less than $1 billion over a 16-year period. Clearly, VA health care in our judgment is a bargain for taxpayers.

And last, there is the misunderstanding about the administration's outyear projections for VA. We both have been around long enough to know that the out-year numbers are projections for planning. Rarely do they match the reality of the President's request.

The congressional budget resolution and appropriators have made it clear that they intend for VA's budget to be flat through the year 2002. On the other hand, the President has assured me that he will review and negotiate a budget for veterans each and every year. He kept that promise in 1996. He proposed a $1.3 billion increase, $1 billion for health care and other discretionary spending, and $300 million more for benefits.

Again, as you pointed out, this year we have another good budget. The President's 1997 total budget for veterans is $39.3 billion. That is an increase of $1 billion above the level approved by Congress for 1996. The President's 1997 budget proposal provides almost $600 million additional for health care, and other discretionary spending, and an increase of almost $400 million for benefits. This budget will allow us to provide our veterans with quality health care, timely benefits, and burial with dignity.

The VA budget contains $17 billion for medical care, an increase of $448 million over the 1996 conference level. This budget will allow VA to treat 2.9 million unique patients, the same as we did in 1995 and 1996. That is over 947,000 inpatient episodes, and approximately 30 million outpatient clinic visits.

It is important to point out that in the past we used economic models to project the level of health care we can provide. Our models show that the budget levels as approved by Congress for 1996 would force the VA to deny 88,000 sick veterans VA health care and 36,000 episodes of inpatient care, and 800,000 episodes of outpatient care would not be provided.

That did not happen because of increased efficiencies and consolidation of services. For example, we have shifted our focus from inpatient to outpatient care. We restructured all of our facilities into 22 integrated networks of care to meet local needs, and we have taken advantage of the economies of scale to purchase pharmaceuticals, medical supplies, and other provisions.

But this has not been easy, Mr. Chairman. In fact, we will lose 5,000 health care employees this year. In fiscal year 1997 we will continue to restructure in order to become more efficient in the delivery of health care. We will do that with 191,000 employees in medical care, a further reduction of 5,154.

Funding for research will be maintained at $257 million. We are requesting $250 million for major construction and $190 million for minor construction.

The “Major construction” account includes funds to meet our longstanding needs: a new medical center and nursing home in Brevard County, FL, a replacement hospital in California, and a clinic in Hawaii.

The major construction account also includes funds to make badly needed improvements in inpatient environments in Wilkes-Barre, PA; Marion, IN; Salisbury, NC; and Pittsburgh, PA.

This budget reflects the final phase of a multiyear restructuring plan for Veterans Benefits Administration. The plan will improve services to veterans and reduce overall cost and operation in the future. The first phase includes 10 initiatives that will be implemented beginning in 1997 and save over $60 million by the year 2002.

These initiatives are designed to consolidate various activities to provide better service at reduced cost. This will also result in a further reduction of 450 employees over that 5-year period. I am very happy to report that we continue to decrease the time it takes to process veterans claims, and we are improving the quality of ratings and other actions, which we will talk about during the questions.

VA has reduced the backlog of compensation and pension claims from 450,000 cases at the end of 1994 to 348,000 in fiscal year 1996, and we will continue working toward our goal of reducing the backlog to 250,000 by 1998.

In fiscal year 1997 we will process original compensation claims in 117 days, a 33-day improvement over 1996. That is right on schedule to meet our performance goals of processing original compensation claims in 106 days by 1998, and we will be doing that with only 12,076 employees, a reduction of 624 in 1997 mainly in support services and, to a lesser extent, through restructuring.

Our budget request for VBA calls for $781 million, an increase of $32 million. The VA is requesting $18.5 billion for compensation payments to 2.2 million veterans, 303,000 survivors, and pension payments to 409,000 veterans and 422,000 survivors.

The Board of Veterans’ Appeals continues to address the unacceptable amount of time it takes to process an appeal. The number of days to process an appeal has been reduced from 781 days in 1994 to 675, and that downward trend continues. We are very excited about that and very proud of that accomplishment.

In fiscal year 1997, we are requesting an additional 50 employees, for a total of 527 for the Board of Veterans’ Appeals. We expect this increase in staff and the continued efforts of the employees already at the Board to reduce by 130 days the average response time on an appeal, and that is being conservative, Mr. Chairman. We expect to do better than that. That will drop the time from 675 days in 1996 to 545 days in 1997.

Our national cemetery system budget calls for $77 million and 1,335 employees to operate 114 national cemeteries. This is an increase of $4.3 million and 14 employees over the 1996 level. In 1997, we will activate new national cemeteries near Seattle and start construction on new cemeteries for Chicago and Dallas, and we will enlarge and improve the national cemetery in Arizona.

## PREPARED STATEMENT

I want you to know, Mr. Chairman, that I look forward to working with you, as you pointed out in your statement, and the members of this committee to honor the commitments that we have made to our veterans. Mr. Chairman, this concludes my statement, and I would now be happy to respond to any questions that you or the committee may have.

[The statement follows:]

## PREPARED STATEMENT OF JESSE BROWN

Mr. Chairman, members of the committee, I am pleased to present the President's 1997 Budget proposal for the Department of Veterans Affairs. In securing $39.3 billion and 217,747 FTE for veterans programs, we acknowledge our commitment to our nation's veterans to provide quality care and services while recognizing the genuine fiscal restraints.

The 1997 outlook for the Department will be to focus our attention on the following four areas:

(1) Better service to veterans—outpatient and primary care, improved timeliness, providing more access and better personal contact.

(2) Our workload—maintain the same level in medical care, meet benefits processing demands and meet cemetery growth.

(3) New revenues for health care—through retention of third party recoveries which exceed a pre-defined goal.

(4) Streamlining—increase the pace through restructuring both in headquarters and field organizations.

### REENGINEERING THE ORGANIZATIONAL STRUCTURE

As you know, VA is currently restructuring its health care delivery system. This past Fall, VA implemented 22 Veterans Integrated Service Networks (VISN's) which will allow VA to decentralize, providing greater resources at the point of patient contact—where health care is provided. The VISN's will consolidate duplicative administrative and health care services within local networks and optimize services to veterans in a cost effective manner. Our goal is to have all Primary Care programs in place throughout the system. This type of care will ensure continuity of care and improved communications between the veteran patient and health care provider. Staffing will decrease as we seek to partner with the community in offering more accessible services to veterans.

The fiscal year 1997 budget reflects the first phase of a multi-year restructuring plan for Veterans Benefits Administration that will improve service to veterans and reduce overall costs of operation in the future. The first phase includes ten initiatives that will be implemented beginning fiscal year 1997 and save over $60 million and reduce FTE by 450 by 2002. These initiatives are designed to centralize and consolidate various activities in order to provide better service at reduced costs.

### GAINSHARING

As part of this request, we are proposing a significant legislative change—Gainsharing. This proposal will allow the medical system to retain a portion of third party recoveries above a defined collection goal. This will increase the Department's incentive to collect from third party insurers. Any additional collections above the goal will be shared by VA and Treasury. Specifically, once the goal is exceeded, VA would keep 25 percent of collections for Category A veterans and 100 percent for category C veterans. VA's share of these funds will be used to improve the quality of health care for veterans and the remaining funds will increase receipts to the Treasury. This legislation will improve care for veterans while helping to reduce the deficit.

### MODALITY OF CARE

VA is still hampered by the existing law that governs eligibility for care and a specific setting for the delivery of health care. We will urge Congress to act upon this essential issue so that veterans can be cared for in the most appropriate setting for their medical condition.

### BENEFITS DELIVERY

We continue to decrease the time it takes to process veteran benefits claims and to improve the quality of rating and other actions. In fiscal year 1997 we will process original compensation claims in 117 days, 33 days faster than fiscal year 1996. We are right on schedule to meet our performance goal of processing original compensation claims in 106 days by fiscal year 1998. Reengineering, training, restructuring, and enhanced technology initiatives will increase service to veterans and contribute to reduced costs of operation.

### REINVENTION EFFORT

Reinvention efforts that benefit the veterans are exemplified by VA's Franchise Fund. Chosen in fiscal year 1996 as a pilot program under the Government Management Reform Act of 1994 (Public Law 103–356), the Franchise Fund is expected to produce significant savings for common administrative services that will allow the current levels of high quality service to be maintained at the same or lower cost. Additionally, under franchise, VA will market services to other federal agencies allowing costs to be spread over a larger unit base, thereby lowering unit costs to government, and the taxpayer, in general. These savings benefit veterans directly, by allowing tight resources to be applied directly to veterans' program areas.

### PERFORMANCE BASED BUDGETING

VA has made significant progress during the last year in developing and using performance measures to assess how well we are doing in meeting our program goals and objectives. Through our involvement in pilot projects under the Government Performance and Results Act, we continue to move closer to our ultimate objective of having a single set of performance measures that are used throughout the program planning, budget formulation, budget execution, and accountability processes. Future budget submissions will reflect our increasing emphasis on both developing meaningful measures of performance and using this information to make more informed budget and management decisions.

I will now briefly summarize the 1997 budget request for VA, highlighting significant budget issues for our major programs:

### MEDICAL PROGRAMS

#### *Medical care*

The 1997 medical care budget request of $17 billion represents a $448 million increase over the 1996 Conference level. VA is also requesting 191,000 FTE, a reduction of 5,154 from the 1996 level. With these resources VA will care for 2.6 million eligible veterans in 1997—2.9 million unique patients—the same number of veterans cared for in 1996. This funding will result in almost 948,000 inpatient episodes—604,000 acute care, 18,000 rehabilitation, 188,000 psychiatric care, 137,000 long-term care, 2.9 million community based care visits, and 29.8 million outpatient visits.

Contained in the 1997 President's Budget request is a fiscal year 1996 add-on of $213 million. This add-on will provide fund essential medical equipment and other medical care supplies.

#### *Medical and prosthetic research*

A total of $257 million and 3,485 FTE is requested to support VA's medical and prosthetic research program. The funds requested will continue to provide for high-priority research projects that not only enhance the quality of veterans' health care but that of the entire population. With the resources provided in 1997, VA research will continue to address critical areas such as outcome measures, nursing research, occupational and environmental hazards, and diabetes. Funding will support approximately 1,600 projects.

#### *Medical administration and miscellaneous operating expenses*

The headquarters office has been streamlined and reduced 25 percent in 1996 from the staffing level authorized for 1995. These employment reductions were integrated with the previously planned headquarters restructuring. The Medical Administration and Miscellaneous Operating Expenses request of $62 million support a 600 FTE level in 1997 plus a transfer of 10 FTE from the Department's Information Resource Management (IRM) Office to establish an Agency Chief Information Office.

### *Medical care cost recovery*

A total of $119.1 million and 2,295 FTE is requested to collect over $729 million from third parties, copayments, and receipts. Collections are estimated to increase by $87 million over the 1996 level.

In addition to the gainsharing proposal outlined earlier, the Administration has proposed legislation to eliminate sunset provisions which were enacted or extended as part of OBRA 1993 and are due to expire in 1998: (1) recover costs from health insurers for treatment of non-service-connected disabilities of service-connected veterans; (2) certain income verification authority, and (3) recover copayments for outpatient medication and nursing home and hospital care. Combined savings through fiscal year 2006 for these three provisions are estimated to equal $2.9 billion.

### *Major construction*

A funding level of $249.9 million is requested for the Major Construction program. The Major Construction request emphasizes ambulatory care, patient privacy/environmental improvements, and increased access to VA health care for thousands of veterans. Funds are included for a new hospital and nursing home at Brevard County, Florida, and a replacement hospital at Travis Air Force Base in California. The Travis facility will replace the Martinez hospital which was closed due to unacceptable seismic risk. In addition, funds are requested for construction of a new outpatient clinic and renovation of related support space at the Tripler Army Medical Center in Honolulu, Hawaii. Outpatient improvements will also be funded at Wilkes-Barre, Pennsylvania. Patient environmental deficiencies will be corrected at VA hospitals in Marion, Indiana; Salisbury, North Carolina; and Pittsburgh (UD), Pennsylvania.

VA is requesting funding to establish new cemeteries in Chicago (Joliet), Illinois and Dallas/Ft. Worth, Texas.

Additional funds are requested to remove asbestos from Department-owned buildings, to pay VA's share of the costs related to the cleanup of hazardous waste, to reimburse the Judgment Fund for the payment of claims and settlements, and to support advanced planning and design activities.

The budget request contains a fiscal year 1996 supplemental add-on of $62 million for major construction. This proposed add-on would provide an additional $36 million for the first phase of a medical center in Brevard County, Florida and $26 million for the first phase of a medical center at Travis AFB in California.

### *Minor construction*

A total of $189.2 million is requested for the fiscal year 1997 Minor Construction program. The request includes $154.1 million for Veterans Health Administration projects. Of this amount, $34.8 million is targeted for outpatient improvements that will enable VA to continue its commitment to provide primary and preventive care. Additionally, $44.1 million will be earmarked to improve the patient care environment. A total of $18.1 million is also included for the National Cemetery System, with $8.1 million devoted to development of additional gravesites at the National Memorial Cemetery of Arizona. Funds in the amount of $11.5 million is requested for the Veterans Benefits Administration. Staff Office and Emergency projects are provided $5.5 million.

Legislation is being proposed to increase the limit on minor construction projects from $3 million to $10 million.

### *Non-recurring maintenance and repair*

A total of $236 million is requested for the Non-Recurring Maintenance and Repair (NRM) program in the Medical Care appropriation. NRM resources will support replacement of additional building service equipment, minor structural improvements, and non-recurring maintenance and repair to existing structures. In addition to new requirements, funds will be applied to the backlog of routine maintenance projects such as repairing roofs, maintaining heat and ventilation and air conditioning systems, ensuring adherence to fire and safety codes, and making needed electrical and utility system repairs. Non-recurring maintenance funds will also be used to adapt systems and areas to comply with requirements to control the potential spread of tuberculosis.

### *Grants for the construction of State extended care facilities*

The fiscal year 1997 request of $39.9 million for the Grants for the Construction of State Extended Care Facilities will provide funding to assist the States to establish new or renovate existing nursing homes and domiciliaries.

## BENEFIT PROGRAMS

VA benefits programs provide assistance to veterans in recognition of their service to their country and the impact of that service on their quality of life. We provide compensation payments to veterans who suffered disabling injuries during military service and to survivors of those who died from service-connected causes, pension payments to needy disabled veterans and survivors, education and training assistance to help veterans readjust to civilian life, vocational rehabilitation and counseling assistance to help disabled veterans obtain employment, credit assistance to enable veterans to purchase and retain homes, and life insurance.

I am requesting $18.5 billion to support 1997 compensation payments to 2.2 million veterans and 303 thousand survivors, and to support pension payments to 409 thousand veterans and 322 thousand survivors. This request includes proposed legislation to revise the standard for liability for injuries resulting from VA treatment (*Gardner* vs. *Brown*). By precluding compensation for the "reasonably foreseeable results" of properly prescribed and administered VA health care, it is estimated that $110.7 million will be saved in 1997 and almost $5.2 billion will be saved through the year 2006.

Proposed in this budget is a 2.8 percent adjustment (COLA), based on the projected change in the Consumer Price Index, to be paid to compensation beneficiaries including Dependency and Indemnity (DIC) spouses and children. Proposed legislation is included which makes permanent a provision of current law that provides VA access to certain Internal Revenue Service data for determining eligibility for VA income based benefits. It also permanently limits the monthly pension benefit to $90 for certain veterans and surviving spouses receiving Medicaid-covered nursing home care. Also proposed, is the requirement that all future cost-of-living adjustments (COLA's) for disability compensation and dependency and indemnity compensation (DIC) be rounded down to the next lowest full dollar amount.

The Omnibus Consolidated Rescissions and Appropriations Act of 1996, Public Law 104–134, provided an additional $682 million for the fiscal year 1996 Compensation programs to fund the COLA effective December 1, 1995, and to fund increased average cost due to higher degree of disability.

An appropriation of $1.2 billion is requested for the Readjustment Benefits program to provide education opportunities to veterans and eligible dependents and for various special assistance programs for disabled veterans. Education benefits will be provided for over 526,000 trainees in 1997.

Legislation is proposed to overturn the Court of Veterans Appeals decision in *Davenport* v. *Brown*, which invalidated VA's long-standing regulations requiring that, for purposes of service-connected vocational rehabilitation eligibility, there be a substantial linkage between the veteran's service-connected disability and his or her employment handicap. This proposal will save an estimated $20.4 million in 1997 and $538.5 million over ten years.

In 1997, VA's Home Loan Guaranty program anticipates contracting with the private sector for most of the VA portfolio loan servicing activities. VA currently provides full mortgage services to a portfolio of about 29,000 loans in the 46 field stations with Loan Guaranty Divisions. Contracting out allows more effective servicing, at lower cost, while retaining VA control of the foreclosure process. This will ensure that no loan is foreclosed unnecessarily and that loans involving veterans' benefits are afforded special consideration. This initiative is expected to save about $524 thousand in fiscal year 1997, with savings of more than $14 million through the year 2002.

Legislation is proposed which repeals certain restrictions on the collection of debts owed to the Government resulting from the foreclosure of VA housing loans. It also proposes to permanently extend VA's authority to (1) increase most housing loan fees by 0.75 percent and (2) charge a 3 percent fee for certain multi-use home loans. In addition, this budget proposes to permanently extend the resale loss provision in the formula that determines whether VA should acquire a foreclosed property or pay the default claim.

## GENERAL OPERATING EXPENSES

A total of $843.7 million is requested for the General Operating Expenses (GOE) appropriation in 1997. This funding level, combined with $142.7 million of administrative costs associated with VA's credit programs (funded in the loan program accounts per Credit Reform provisions), $12.2 million in reimbursements from the Compensation and Pensions account for costs associated with the implementation of the Omnibus Budget Reconciliation Act of 1990 as amended, and $32 million from insurance funds' excess revenues, together with other reimbursable authority, will provide $1.085 billion to support operations funded in the GOE account.

### *Veterans Benefits Administration*

The 1997 budget request for the Veterans Benefits Administration (VBA) is $643 million with an average employment level of 12,076. This request, combined with $138 million associated with Credit Reform funding, will result in an increase of $32.5 million in discretionary appropriated funding over the 1996 level. Average employment is 624 below the 1996 level due to decreases in workload and the impact of ten restructuring initiatives designed to maintain or improve service to veterans, plus reduce costs.

VBA continues to make progress in processing compensation and pension claims more quickly in 1997 and will meet all its timeliness goals by fiscal year 1998. Veterans will get their original compensation claims processed 33 days faster in 1997 than they did in 1996. VBA's backlog of compensation and pension cases will be reduced substantially, from about 378,600 cases at the end of fiscal year 1995, to 277,000 cases at the end of fiscal year 1997. This is a reduction of 28 percent and represents continued reductions that have cut the pending case level to less than half what it was at its highest point (570,000) in fiscal year 1994.

Resources are included in fiscal year 1997 to continue development of VBA's VETSNET initiative, which will replace old computers and software currently used to pay veterans monthly compensation and pensions checks. This project, to be completed in fiscal year 1998, will ensure veterans are paid accurately and timely in the future, using enhanced technology.

VBA proposes in this budget the first phase of a multi-year restructuring plan that will improve service to veterans and reduce overall costs of operation in the future. This first phase includes ten initiatives that will be implemented beginning in fiscal year 1997 and will save over $60 million by fiscal year 2002.

Five of the initiatives will centralize various Loan Guaranty activities and provide current or better service at reduced costs. Two other initiatives will shift the processing of selected Compensation and Pensions claims to other offices which can provide more timely and accurate service for veterans at decreased costs. Another initiative proposes to consolidate remaining Education activities at the four Regional Processing Centers. Office of Information Technology resources will be realigned under another proposal which redirects some current employees devoted to supporting VBA's various information systems. Finally, the last initiative will increase veteran access to information about VBA programs and the status of their claims.

VBA's Field Restructuring Task Force is continuing to develop the details of an overall multi-year restructuring plan which will provide continued high quality service to veterans and also reduce future fiscal year cost requirements.

### *National Cemetery System*

For fiscal year 1997, the National Cemetery System proposes a budget of $77 million and 1,335 FTE. This represents an increase of $4.3 million and 14 FTE over the fiscal year 1996 level. Included in this increase is $800 thousand and 4 FTE for activation of the new Tahoma National Cemetery in Seattle, WA area; an additional 10 FTE to address increasing workload in existing cemeteries; and additional funding for inflation and payraises. Projections indicate that interments will rise by 2.4 percent; the number of graves to be maintained by 2.6 percent; and acres of grounds to be maintained by 3.2 percent.

### *General Administration*

The General Administration 1997 request is $200.7 million and 2,355 FTE. This total reflects a decrease of $12.8 million below last year's level and a reduction of 474 FTE. These reductions are primarily the result of VA being selected as one of the government's five Franchise Fund pilots. Funding and FTE have been moved to the customer organizations who will then purchase services from the Franchise Fund provider organizations during fiscal year 1997. General Administration sustains the pay and personnel system and the reporting systems necessary to account for much of VA's resources. Funds in this account also help provide legal services to the offices that service America's veterans and provide appeal opportunities for veterans seeking benefits. It also provides resources to administer the Contracts Disputes Act.

### *Board of Veterans' Appeals*

The Board of Veterans' Appeals (BVA) continues to address the unacceptable amount of time it takes to process an appeal. In fiscal year 1997, BVA is requesting an additional 50 FTE for a total of 527 FTE. This increase in staff will result in a reduction of 130 days in the average response time, falling from 675 days in fiscal year 1996 to 545 days in fiscal year 1997.

### *PAY VA*

PAY-VA is an initiative to replace VA's 30 year old payroll and personnel reporting system. It will improve the accuracy and integrity of data, reduce error rates and reduce time and staff needed to make future payroll and personnel changes. This budget request includes $5.9 million for this initiative.

### CLOSING

Mr. Chairman, the challenges before us are great but they do not exceed our dedication and commitment to ensuring the best possible care and service to our Nation's veterans. We owe our veterans the best we can provide. I look forward to working with you and the members of this Subcommittee to meet these challenges. This completes my prepared statement. I will be pleased to answer any questions the Committee might have.

## AVAILABILITY DISCRETIONARY RESOURCES

Senator BOND. Thank you, Mr. Secretary.

In the hearing we held in March the General Accounting Office testified that:

> VA in our view has significantly overstated its future resource needs. It has not factored into its calculations future efficiency savings. Potentially, the efficiency initiatives indicate that the VA system may have more discretionary resources available than was previously expected.

Now, what you are telling me was that you found those resources in the budget so you were able to provide the services required during this current year, despite the budget, so do you agree with the GAO's suggestion that there are discretionary resources available?

Secretary BROWN. I do not necessarily agree with that report in its entirety, but I do agree that there is opportunities within the VA. It is a vast system, a system where we, as was pointed out, spend over $100 million each and every day, opportunities to capitalize on efficiencies.

We have identified those efficiencies based upon what is going on in the private sector. We are duplicating them. As I pointed out in my opening statement, we are taking advantage of the economies of scale, we are consolidating our pharmaceutical activities, the same thing with respect to medical supplies.

We are moving from an inpatient modality of providing care to outpatient, and we have been able to do that under Dr. Kizer's leadership much more rapidly than we had anticipated, so with that we were able to, as opposed to not expanding—and I think that should be viewed in the context that every year for as many years as I can remember we have always increased the number of veterans that we provided care to, probably anywhere from 1.5 to 2 percent.

Beginning in 1995, our unique patient load was 2.9 million. We are doing the same thing in 1996, that we at least projected, and we expect to do the same thing in 1997.

So I guess what I am saying is that yes, there are opportunities to be able to become more efficient. We have identified those, we are moving toward it, and I am very happy to say that we have not had to deny any care to any veteran that was already receiving it.

At the same time, we have not been able to continue in our previous trend of making more care available to veterans each and every year through new activations and so forth.

## IMPLEMENTING COST SAVINGS

Senator BOND. But it is your position that you have been able to implement cost savings without jeopardizing or decreasing patient care services.

Secretary BROWN. Yes, sir; we have done that, we are proud of that for 1996. We expect to do, quite frankly, Senator Bond, the same thing in 1997.

Now, after 1997, we do not know what is going to happen. As you know, in any corporation or any business entity there are only so many efficiencies that you can capitalize on, and we are working very hard trying to identify all of those that we can use so that we can actually have a structure that is very, very lean, and, at the same time, allow us to complete our mission.

## FUTURE FUNDING PROJECTIONS

Senator BOND. Having stated that, then, I ask you to focus on the budget, the planned operating recommendations that have been put forward to us by OMB for the fiscal years 1998–2002.

It appears, based on the scoring of CBO, that the budget resolution, which you described last year as mean spirited, that green line across the top is in the subsequent years substantially more generous than the projected spending by OMB. The budget that has been presented to us would drastically decrease veterans medical care to about $13 billion by the year 2000.

How would you characterize that red line which is the current administration out-year budget proposal, and if you cannot make significant further savings in costs, how would you achieve the goal of providing services under that budget, the red line being the President's budget for the years 1998–2002?

Secretary BROWN. Senator Bond, we cannot. We cannot operate under the scenario that you described, nor can we operate on flat funding for 7 years. I notice your green line. I think it has one error in it. It should have a little bump in 1996.

Senator BOND. That was the original budget resolution last year. The spending for the current year was actually increased above the budget level, and we do not have a budget passed by Congress for the 1997 budget. I would imagine it would reflect that increase and have a rather flat line leading from the increased amount made available for this year.

Secretary BROWN. Let me respond to that this way. The way that chart should show in 1996, you have a little bump there for 1996, and then the Congress has made it clear through testimony and other language that we have observed that funding will remain flat out to the year 2002, so from 1995, a little bump in 1996, and then we are flat out to 2002.

We know, based upon our current model that we use for projection—now, keep in mind that this model that we are using will change now because we are taking advantage of these efficiencies that I previously described.

But, basically, this model that we now use shows that green line there, that will force us to eliminate about 60,000 positions. It will force us to deny care to about 1 million veterans, and it would force us to close the equivalent of 41 hospitals. Now, that is based on the green line, so obviously if that is what is taking place there with the green line, and we cannot live with that, we certainly will not be able to live with the red line.

The President understands that. I talked with him personally about it, and that is one of the reasons why he gave me his personal commitment that he was going to make sure that the Nation honors its commitments to veterans and that he will negotiate the budget each and every year.

So the main point that is realistic up there is the President's 1996 and his 1997 budget requests. We all know what is going to happen to that, but the out-years and the tough decisions will be made each and every year.

Senator BOND. Last year, on August 21, you sent an e-mail saying that the 7-year budget approved by Congress to eliminate the deficit would be devastating to veterans programs. Do you intend to send a similar e-mail about the President's budget this year?

Secretary BROWN. No; I do not. The basic difference is this, Mr. Bond. As I mentioned to you, the VA cannot live on either one of those. The President has made it very clear that he will negotiate this with the veterans community every year. The Congress has equally made it clear to me, at least, that we are expected to hold spending at the 1995 level with the exception of that little bump that we received in 1996.

Senator BOND. So the President has told you personally that he does not intend to follow that budget showing the decline in spending in the years 1998, 1999, and 2000?

Secretary BROWN. The President has told me personally and through the office of OMB and other executives over there that we will negotiate with the veterans, at least, he will negotiate the VA's budget each and every year with the veterans of this Nation.

Senator BOND. Is it your understanding from the President that you will not, therefore, encounter those cuts that are shown in the budget that the President and OMB has presented to Congress?

Secretary BROWN. I would be shocked. As you know, if you look at the President's budget, beginning in 1994, and evaluate the projections that he made then, we are about $1 billion ahead of those projections. We saw what a wonderful budget we received in 1996, $1.3 billion over the 1995 level.

We again have submitted, in the President's budget for 1997, $1 billion over the enacted numbers at the time this was submitted—those were the conference numbers, but that is the same as the enacted bill, so the President has kept his word that he will negotiate with us each and every year. He has done that, and I have no reason to believe that he will not continue to do so for the next 5 years.

## ACHIEVING A BALANCED BUDGET

Senator BOND. Well, the President has stated that we are going to achieve a balanced budget under his plan. If the President knows that he intends to increase your budget, then to achieve the balanced budget that he has promised through the OMB he also knows that he intends to cut somewhere else, and why do we not put up the other chart about the broader—this is what the President proposes to achieve a balanced budget.

This is not for VA. This shows all spending, coming down markedly in appropriated spending. Has he indicated to you where he is going to make those cuts elsewhere, if he is not going to make the cuts in the Veterans Administration budget?

Secretary BROWN. No, sir; but what is clear, that he plans on having a balanced budget in 7 years, and he is going to have to make the hard decisions. He is going to have to live within the caps, within the limitations, and certainly we recognize for every dollar that is increased on one side there will need to be generated savings, but that is what he is going to have to do.

Senator BOND. But this budget—and put the Veterans Administration budget back up.

But this, you are telling us this is a sham. This is not what they intend to follow. This budget, the President has assured you, is not going to be the budget that the Veterans Administration will have to live with.

Secretary BROWN. Senator Bond, that is not what I said. What I said, that the President has assured me that he would negotiate with the veterans community every year, as he has done for the last 3 years, and particularly as he has done the last 2 years, where we came in with reasonable—I think with wonderful budgets, which ultimately were cut back by $915 million.

Senator BOND. So you are saying that these out-years mean nothing. It is all going to be negotiated in the future, so we should not worry about the President's budget plan. He does not intend to hold you to those significant decreases in spending. This 7-year budget plan is a sham, it has no substance is what you are saying. You are not planning to live with that budget.

Secretary BROWN. I am not planning to live with it. I am not planning to live with your budget, the green line, nor am I planning to live with the President's line.

Senator BOND. You do not work for us, you work for the President, so you are saying you do not like our budget, but you know that his budget does not mean anything.

Secretary BROWN. I think his budget means something to me, because he has given his word that he is going to negotiate with the veterans community.

Senator BOND. He has given Congress his word that this is how spending is going to come down, on the red line, and he has given you his word that that is not going to be the case, so we should not worry about or put any stock in the President's 7-year discretionary spending budget.

Secretary BROWN. Well, I think that the President will have a balanced budget. He recognizes that in the out-years, which are very difficult to make projections based on need, he is going to have to make those decisions on a year-by-year basis.

And he recognizes that at least with respect to veterans, and I cannot speak for any other program or any other department, that the Nation has a moral and legal commitment to our veterans and their families, and that is one of the reasons why, early on, probably about 2 years ago, he made it very clear that he is going to negotiate with us each and every year to make sure that veterans receive the kinds of resources that they need in order to be able to continue to live a quality life.

Senator BOND. Well, Mr. Secretary, that is what I had suspected all along, that the plan to make drastic cuts in appropriated spending in out-years to reach a balanced budget was a fanciful notion put forward not with the intent that the administration would live with it.

In fact, the groups that have been affected by those cuts have been assured that those out-year figures do not mean anything and thus, while we all are in favor of balancing the budget in general, we have been assured, as it affects particular areas, that those cuts will not come about.

That is very disturbing and very disappointing, Mr. Secretary.

I would now turn to my distinguished ranking member for her questions.

### COMMENDING VA PERSONNEL SERVICE DURING SHUTDOWNS

Senator MIKULSKI. Mr. Chairman and Secretary Brown, just to pick up, before I go into the budget questions I want to say thank you. I want to say thank you to you, and that is to be viewed as a thank you to every single person who worked at the Veterans Administration during the shutdown. That was an enormous sacrifice.

I know for many of them it created significant tension. While the nurse was working the night shift and providing the extra premium for day care so that she could be there on a night shift, there were her bills, and I could use that, then, as an example for every single person.

What I was so proud of in my State of Maryland, whether it was the people serving the mentally ill at Perry Point with chronic schizophrenia, chronic Alzheimer's, the acute care needs at the VA hospital, riding that rocky, snowy, blizzard-covered white hurricane event that hit the Cumberland Outpatient Clinic which I will talk to you about, they were on the job, and I am enormously appreciative of that.

And most of all, I know that the veterans, the sick, their families and so on were also there as we move through those claims, and I think we have to also look at the consequences that that had on backlog and other things, so I would just like to say that, and hopefully we will never be in a shutdown again.

### REDUCING CLAIMS BACKLOG

I would like to move forward, having said that, to the issue of the claims processing. Both the VA itself and then with the VA Board of Appeals, when we talk about how reducing that to 500-and-some days, that is really 18 months, and I understand the GAO had a series of recommendations particularly at the Court of Veterans Appeals on how to reduce that backlog.

Could you tell me in more detail what we are doing at that court of appeals, and what needs to be done to reduce the backlog, and when we talk about it also, the other backlog, the general compensation backlog, what specifics need to be done, and are those investments needed either in streamlining the regulatory process—in other words, it is too many things to comply with and too much paper to produce, with a longer outcome, or is it technological and personnel needs?

Secretary BROWN. Yes, ma'am. As I mentioned, I think that we have finally—if you look at my testimony last year, I was very critical of our numbers over at the Board of Veterans' Appeals, because quite frankly our outyear numbers at that time did not show anywhere near that we would be able to decide more cases than we were bringing in.

We are now, for the first time in about, probably since 1991 or 1992, deciding more cases than we are receiving, and we are posturing ourselves that we are going to accelerate that process.

I have Roger Bauer here, and I am going to ask him to tell us exactly what we are doing over there in order to manage this problem as opposed to allowing the problem to continue to manage us.

Mr. BAUER. Thank you, Mr. Secretary.

Senator, what is happening is, through the funding provided by the Congress we are bringing additional attorney resources onto the Board. This, in addition to resources that have been granted in past years, is now allowing us to turn the corner, as the Secretary said, and to produce more cases, decisions, final decisions for the Department than we have in the past.

We are now exceeding the point where the decisions coming in and the decisions produced are such that we are producing more, and, therefore, we cut the response time down.

Now, there are approximately 50 attorneys that will be brought in under our 1997 budget request. All these employees, as I said, will be attorneys—these are the people that directly produce the cases. Through efficiencies gained in our administrative process, we will not need to devote any more resources to the administrative processing of these cases.

Now, another point that is important is that the Secretary has asked us to look at this departmentally as well as our individual elements, such as the Board and the Veterans Benefits Administration. We have set up a focus group with the Veterans Health Administration, the Veterans Benefits Administration, and the Board to look at some of the problems we face and can cut down without spending additional resources.

We have identified that over 70 percent of the remands from the Board, as well as a significant number that come down from the court, involve requests for repeat examinations by the Veterans Health Administration.

Now, this is not because the Veterans Health Administration has been doing a poor job. What it is is a changing environment that has been brought on by the court where you have a traditional process where you have opponents superimposed upon the paternalistic ex parte process that has always existed.

This means that we are asking our doctors to provide reports and information and opinions that historically they have not done so. We are working with VHA to provide that data that will make these examinations right the first time. That will make less remands. We do not have to repeat the process by remanding again, and we will cut our response time by doing that at very little cost.

Senator MIKULSKI. Well, thank you very much, Mr. Bauer, for that explanation, but Mr. Secretary, that is exactly what we have been talking about now for about 3 years, which is, starting from the very time a claim comes in and the examination needs to occur, to go through the entire chain, so that quite frankly it would be done so properly at the right time there would not even be a going to the court of appeals, though that is the right of every veteran to do so, that they would know that their claim at the first judgment level was so accurate that to pursue that would only eat up more time from their claim.

Now, I acknowledge that the disability claims, and so on, are wreaking havoc, and are a challenge not only to you but to the Social Security Administration, where we have a 1-million-person backlog.

Also, we could do lessons learned on how Social Security is streamlining itself, but we really do need to get the backlog down. We need to streamline the process, and we need to do it from the day someone walks in, because when I went to the claims office in Baltimore, I mean, they had like 18 different volumes, and just to keep up with all of that—now, I would hope that all aspects of the process would be streamlined, and I can pursue that. I think you know what I am saying.

We really look forward to working with you, but I think part of it is training as well as technology, and the regulatory process.

## IMPLEMENTING INSPECTOR GENERAL RECOMMENDATIONS ON PHARMACEUTICALS

Let me go on to the issues of health care. First of all, I think both Senator Bond and I felt that the meeting and hearing that we had with Dr. Kizer was really a very informative one, and we are on the right track. I have a particular question, though, related to cost savings. What emerged during the hearing was a series of recommendations from the inspector general on what they felt cost savings could be achieved.

My question to you, Mr. Secretary, is, given those inspector general reports, what steps are being taken to implement the management recommendations in that area? I will give you one specific example. The inspector general talked about that through management reform, and also again using some private sector approaches, $44 million could be saved in the pharmaceutical program.

Now, you and I know how important the drug program is. We know how prickly the issues around copayments are. We have been through that. I wonder what you see, No. 1, in implementing many of the inspector general recommendations, and what is your approach to that, and then particularly your approach to the pharmaceutical area?

Secretary BROWN. Yes, ma'am. The pharmaceutical area happens to be one of those areas that we are very, very proud about. We used to have a depot distribution concept where we would buy all of the drugs and store them, and we would store them in about seven locations. We got rid of that, and we have a prime vendor concept now, so basically the distributors send the pharmaceuticals directly to the facilities.

We are now very, very heavily involved in mailing out prescriptions which is very cost effective, and at the same time very efficient in terms of getting the medications to our customers or our veterans when they need them.

But in order to respond to your question with respect to the inspector general, I am going to ask Dr. Tom Garthwaite, who is our Deputy Under Secretary for Health, to respond.

Dr. GARTHWAITE. I think there are some additional pieces in addition to what the Secretary has said. We also are instituting the VISN formularies which will help standardize the kind of medication we buy and increase our buying power.

Senator MIKULSKI. I am sorry, what formularies?

Dr. GARTHWAITE. VISN formularies. We want to move eventually to a national formulary.

Senator MIKULSKI. What is a VISN formulary?

Dr. GARTHWAITE. The Veterans Integrated Service Network, a network formulary with a new organization of the VA. We are organizing the networks.

Senator MIKULSKI. Right. I got it.

Dr. GARTHWAITE. I am sorry, I apologize. Acronyms seem to be a way of life in medicine.

So we are moving to a formulary, which allows us to then standardize and to increase our bulk buying capacity and get the best value. We can get experts to shop around and find out whether there is a true difference between generics and trademark drugs and get the best value for patients without compromising care.

One of the hardest things to do, however, is to challenge and discuss with clinicians their prescribing habits. That is probably where the biggest gains in pharmacy will be. We have a pharmacy benefits program under development, which will be led by field-based clinicians, and enable VHA to pressure technicians to avoid specific expensive drugs when an alternative less expensive drug of equal quality would do.

So we have numerous initiatives in the pharmacy area. I think we are being as aggressive as any health care system and trying to save money there.

## OTHER INSPECTOR GENERAL RECOMMENDATIONS ON HEALTH CARE

Senator MIKULSKI. Before I come back to the pharmaceutical program, could you comment on other recommendations from the inspector general in the health care area or benefits?

Secretary BROWN. Well, one of them had to do with something that Senator Bond raised. The inspector general recommended that we look at some of our hospitals who were performing surgery and had questioned whether or not there was enough activity in order to maintain the competency level not only of physicians but also of the skilled personnel, like the nurses, the intensive care people, everything that you must do in order to bring a person out of surgery.

Initially there were about 33 or 34 on that list. I think that we have responded to all of them. Why don't you go ahead and finish?

Dr. GARTHWAITE. We have closed, I believe, six surgical programs in small VA's, and we are still looking at others. That is part of our VISN planning process, and we anticipate that a variety of programs may be consolidated as necessary.

I cannot remember off the top of my head all the inspector general office reports. They talked a lot about physician staffing. We have some significant reservations about the methodology. However, we are aggressively pursuing right-sizing our physician staff and matching it to the needs of veterans in various areas and with various programs.

It is a very systematic process. We anticipate our business plans for the VISN's to be in our hands at the end of September 1996.

Senator MIKULSKI. Doctor, I am going to interrupt. I note my time is up, but with the indulgence of the Chair, first I just want to comment, first of all I am a big believer in the inspector general's system not only here but throughout all of the agencies, and not only to identify waste and fraud and areas like that, but often they give a second opinion on management, and when we are all involved in day-to-day, sometimes we do not see those things, so that is why we turn to the inspector general, often, to give us recommendations.

I do believe the pharmaceutical program is a very important way that we can manage care without manacling the physician or in any way disenfranchising the veteran. We want to be careful that the pharmaceutical program does not become a commodity distribution program but is a clinical tool.

## WOMEN VETERAN HEALTH CARE

A last thing, and if I could, the issue related to women's health care. I looked through all of your five budget statements and the summary and so on and did not see women's health at the Veterans Administration talked about, and this is one of the areas where we had made significant gains in acknowledging the role and need of women, if I could just have a statement, and then we would be able to go forth.

Secretary BROWN. Let me just say one thing about that. That is one area, Senator Mikulski, that I share your concern about.

When I first came to the VA, it really bothered me—it still bothers me, because in many of our hospitals we still do not have private bathrooms for women and so forth, but what I am pleased about is that we have woman's clinics in all of our hospitals now.

I mean, actually, if you visit our hospital—and this will cause me some problems, but if you visit our hospitals, female veterans have a better response to their needs at this time than veterans, male veterans, because we have a clinic that is specifically set up and designed to respond to their unique needs. To help them through the process we have a coordinator there to make sure that they are able to work their way through.

Now, to say that we are responding in every way like we should, I am not going to go that far, but I will say that at least we know what we need to do, and we have some idea on how to get there because we see the number of female veterans growing each and every year.

I remember when there was, like, 6 percent, and now it is like, 14 percent in the military, and they are going to become veterans, and that percentage is going to continue to grow. Another thing you are going to see is because of the pressures on society, the woman veterans are going to have many of the problems that the men have.

And I am talking about missing arms and missing legs, because they are going to be placed in situations that actually place them at risk for different and more dramatic types of illnesses and injuries, and so we are preparing for that, and that is one of our top priorities.

Senator MIKULSKI. Well, I know that it is time for Senator Burns.

First of all, I think we are all excited about the management reforms that Dr. Kizer is bringing, and we look forward to working with that. My issue in raising the women is to make sure that they are on the radar screen as well.

### COMPENSATION AND PENSION SERVICE AT FORT HARRISON

Senator BOND. Thank you, Senator Mikulski.

Senator Burns.

Senator BURNS. There are some concerns about acronyms. I have a daughter, and at the meeting we had with your medical people here was very, very good. I have a daughter who graduates medical school in a year in Seattle, and she has had some experience with your veterans facility in Seattle, and so acronyms, and whenever the dialog turns to medical terms, her father's eyes glaze over, and I have to make her go back and say, OK, now what did you really say, and I may do the same thing with you if that is all right.

My questions are very parochial, because I am concerned about the dialog between you and the chairman this morning, Mr. Secretary. It seems like we have got three different messages going out there, and all of them carry with them different signals, and some of them are political and some of them are not, and I would rather stay out of the political arena when it comes to taking care of our veterans. We made a commitment to our veterans, and I do not like the mixed signals that go out.

Now, one, I will talk about Fort Harrison this morning and a little bit about Miles City, but whenever you work very hard and try to develop a work ethic and try to develop an ethic to where—you become very efficient, and then you are not rewarded for that efficiency, and I think we have a case in Fort Harrison.

Just to give you an example, in the compensation and pension division, Fort Harrison ranks 20th out of 58th on quality, timeliness, and other costs, and we are very proud of that record there. I mean, it is pretty hard, and, of course, you have got to get down to the specifics whenever you get above the 50th percentile, in other words, if you are doing business in the better half, so to speak.

And it was one of only six that got the maximum rating in quality, and yet we are destined to lose that facility and be moved to Phoenix, where Phoenix ranks 44th, and I do not think that is a very good reward for people that have really tried to do a good job in providing the services and the pensions and the quality of care at Fort Harrison. We rank 23d of 58th in workload, versus FTE's.

I think if I was the administrator at Fort Harrison I would be very proud of that, but I am sure not being rewarded for it because—and we are also the fourth lowest, we are the fourth lowest—in other words, we are in the top five in operating cost any way you compare that, and what I am saying, I do not think we are being rewarded. In fact, maybe we ought to be doing the work for Phoenix.

Maybe we should have some of our people—maybe we should be looking at our particular facility and doing Phoenix's work rather than moving ours into a less efficient area, and I will tell you what, I worked very hard on broadband telecommunications, as my colleagues will testify. I felt when we redid the telco bill this year to allow some technologies to flow, I think that is going to help us a lot.

But do not come down on us at Fort Harrison because we are efficient and move us into a place where there is doubtful efficiency, or some of the personal touches that we are going to have to do in order to take care of our veterans.

I would like to hear your response to that.

Secretary BROWN. First of all, Senator Burns, I agree with everything you said, to include the criteria that you use to measure on whether or not you would move a function from one location to another. That is the criteria that it is my understanding we are using, and so I am going to ask our Under Secretary for Benefits, John Vogel, to explain why those functions out of your regional office are proposed to be moved.

Mr. VOGEL. Thank you, Mr. Secretary.

Senator Burns, we had no intention of closing any regional offices. We are, in fact, proposing in 1997 to move some functions to other offices, and there are three things that drive that, and we will achieve.

We will improve on the service delivery through better timeliness and quality in all of these initiatives, we will do so at less cost, and we will minimize the impact on our employees to the extent that we possibly can.

A number of our offices where we are going to shift some work operate on the edge. They are so small that they can become dysfunctional quickly with the loss of a couple of personnel. In the last 3 or 4 years, Fort Harrison as well as all of our regional offices have improved markedly in delivery of service, whether it is timeliness or quality.

At Fort Harrison, if a veteran files a claim there for original disability compensation, he will get a decision in about 233 days. For compensation work in Sioux Falls, SD, the decision will be rendered in 99 days, a savings of 124 days. Those are the things that drive our decisions.

In the last Congress, there was enacted into law a requirement that the VA study the number and types of adjudication divisions with the very strong suggestion that 58 is too many. Fifty-seven is the number of regional offices we have.

We responded to that in a rather general way, and in return got a letter signed by the chairs and the ranking members of the House and Senate Veterans Affairs Committee that it was not specific enough. We had general management principles in it and things like that.

We now have a specific plan, and we can, in fact, deliver better service and better quality levels at less cost to the U.S. taxpayer, and that is what is driving us, service first.

The budget reality is, as I see it, that no ship is going to come in next year or the year after or the year after with resources for us. We are trying to get ourselves positioned now and through the turn of the century to enhance service when we know we will have less resources to do it.

[CLERK'S NOTE.—The following is provided to clarify the last witnesses testimony.]

### COMPENSATION AND PENSION SERVICE AT FORT HARRISON

The proposed relocation of some elements of compensation and pension claims processing from Ft. Harrison is part of the initial transition phase of a comprehensive field restructuring plan. The transition year initiatives include four large stations and four small stations. For the four large stations (Los Angeles, New York, Oakland, and Washington Regional Office), all pension work will be consolidated to other stations. For the four smaller stations (Anchorage, Honolulu, Ft. Harrison, and Wilmington), primary claims processing will be consolidated elsewhere. Some basic award adjustments (dependency changes, some income changes, and hospital adjustments) will continue to be processed at these sites by Veterans Benefits Counselors who will be provided claims processing training and appropriate claims processing authority for these adjustment actions.

Comprehensive field restructuring will be implemented following the transition initiatives. All regional offices will be affected by the restructuring. No regional office will be closed, but functions will change at many. A significant number will no longer perform all adjudication functions, but will continue to provide Hearing Officer hearings, and some basic award adjustments. Other stations will become Claims Processing Centers with responsibility for basic claims adjudication for expanded jurisdictions which generally will include more than one state.

Selection of a station to serve as a Claims Processing Center is not intended to reflect either punishment or reward, but rather to best serve our future business needs. In the case of moving work from Ft. Harrison to Phoenix, it is noted that the two Adjudication Divisions performed roughly equivalently during a measured base period (fiscal years 1993, 1994, 1995). Ft. Harrison had a small overall advantage ranking 20th to Phoenix's 24th. However, Phoenix greater size provides a better base for expansion than Ft. Harrison. Further, Phoenix is currently meeting the challenge of serving as one of four centralized processing centers for Persian Gulf War claims. Finally, Phoenix is providing significantly more timely pension claims processing service than Ft. Harrison (82 days versus 130 days for original pension claims). Sioux Falls, while approximately the same size as Ft. Harrison has a significant performance advantage ranking 5th overall to Ft. Harrison's 20th. Further, Sioux Falls processes original disability compensation claims in 99 days compared to 238 for Ft. Harrison. For reopened compensation claims Sioux Falls averaged 63 days to Ft. Harrison's 192 (all averages based on fiscal year 1995).

### VBA RESTRUCTURING

Senator BURNS. Well, I guess it boils down then, if that is the answer, then I think maybe we should have looked at Fort Harrison to do some of the work in Sioux Falls, because that telecommunications line that you are going to use, that is a two-way communications line. It just does not run one way.

Mr. VOGEL. Absolutely, Senator Burns. We have been asked a question and it is a very good one. Where is restructuring going to take you? What are you looking for when you get out to 2002 or so?

Let me tell you that these 1997 initiatives were in part based on being in a comparative crisis situation from 1994 to 1995 and from 1995 to 1996, and 1996 to 1997. Out of about 13,500 employees we are going to take off 1,500. We were really in a crisis mode and came up with these initiatives. There are 10 in number. Many of them involve finance operations, loan guaranty operations and such things.

I have six subgroups, a task force of our very best managers from field stations, from the veterans service organizations and from the State directors of Veterans Affairs programs assisting us with answering our restructuring questions. What ought we to look like at the turn of the century and where should we be doing the work? I do not have the final answer.

We expect to have at least a broad agreement on that by the end of the spring. We cannot stand still. As was pointed out earlier by the chairman, we look today like we looked in the fifties, with 58 regional offices doing all of the same things they virtually did then. Except for a couple of consolidations in loan guaranty we do not see ourselves being able to maintain that posture with the resources we are looking at.

[CLERK'S NOTE.—The following is provided to clarify the last witnesses testimony.]

### VBA RESTRUCTURING

Restructuring initiatives are premised on projected declining workloads with proportionately greater declines in staffing resources. Restructuring will maximize resource utilization to insure the highest possible level of service to veterans and their dependents, despite projected decreased personnel resources. The ultimate goal of restructuring is to significantly improve customer service and not just to maintain current service levels. Providing quality, timely service will remain primary performance benchmarks. Additional restructuring benchmarks include increased information access and appropriate access to decision makers. Consolidation of some elements of claims processing to consolidated Claims Processing Centers (CPC's) will be a cornerstone of our efforts to improve the quality and timeliness of service delivery. Enhanced technology will be a critical element in improving information access. The implementation of a Claims Processing System (CPS) will provide a detailed online status of claim data elements accessible to employees staffing telecommunication centers and satellite offices, facilitating prompt, informative responses to claimant inquiries. Access will also be available to accredited service officers. Provision for personal hearings conducted by Hearing Officers at selected VA Medical Centers in addition to all current regional offices, will improve access to key decision makers.

Based on current projections of a 30 percent reduction in staffing by the year 2002, a number of our current fifty-seven Adjudication Divisions will be too small to be viable. Assuming proportionate reductions, ten Adjudication Divisions would have staffs of 15 FTEE or less. While some small offices are successful, small offices must overcome numerous processing disadvantages. Small offices are unable to take advantage of efficiency of scale. They are unable to specialize, which is a particular challenge considering the increasing number of complex issues being addressed in claims adjudication. Small divisions are unable to develop depth of expertise, so they become dependent on key personnel. They are particularly vulnerable to personnel turnover. The loss of one or two key employees can be devastating, both from the loss of experience and the loss of processing capacity while a replacement is trained. The administrative overhead costs for a small division are disproportionately greater than larger offices. Management at a small office, while responsible for only a fraction of the claims of large stations, must review as many processing areas and ensure regulatory compliance in as many areas as a large station. Management and administrative staffing ratios are generally greater at a small office reflecting greater overhead, while at the same time often not providing adequate backup for periods of leave or emergency.

The selection criteria for Claims Processing Centers includes: geographic distribution, program performance history, cost factors, and transition impact. Transition impact includes employee impact from both a business and an individual standpoint. The relative size of a proposed core station is a central factor in overall employee impact. Assuming that the average Claims Processing Center will have a staff of approximately 115 FTEE, basing that center on a current Adjudication Division of 80 FTEE compared to an Adjudication Division of 15 FTEE has clear business and employee impact advantages. Costs involved in transforming a small division into a large Claims Processing Center includes significant relocation costs to move employees (if sufficient employees willing to move are available), or if relocation funds are not sufficient or employees are not willing to move, large training costs (including dramatic productivity losses during the training period), and increased facility expense. Obviously from an employee impact viewpoint, the fewer employees potentially affected (by relocation, transfer to another function, voluntary retirement, or reduction in force), the better. While it would not be acceptable to place a Claims Processing Center in an area of disproportionately high costs, and/or sustained poor performance, there are clear advantages to consolidating to a large core station, if cost/performance data is relatively even.

### MILES CITY VAMC

Senator BURNS. On another issue, and I thank you for that explanation, and I wish you would take very seriously what I suggest, because I think we can do some things at Helena, MT, that we can do anywhere else in the Nation and have the personnel and have the know-how to be efficient with it and maybe take a look at us as being a regional office.

I mean, I get tired of everything you have got to move out of here, because I tell you what, we have got enough space in the State of Montana we do not have to be thrown in with four or five other States to create a bigger area. From Eureka to Alzada, you know, it is further than it is from Chicago to Washington, DC, and we do not even get out of the State.

And with a situation like we have got in Miles City, I appreciate you requested some increased funds in VA medical care. We increased that last year, and you know what, we never got credit for it. We did not get credit for it. Nobody knew about it, because the information that went out of your office, we are in this crisis, and those villains on the Hill have got my budget. We did not get credit for that, but I am glad we have increased it again this year, because that is one of my areas of concern also, Mr. Secretary, and my time is up.

The relationship between the Billings Clinic in Billings, MT, and Miles City, and the service center there, I would ask if you could give us any strength that that will be maintained, that relationship because Billings is our largest center and probably has most of the veterans, to be honest with you, around 70,000 people.

There are 120,000 in Yellowstone County, still 140 miles to Miles City where the services are, and that relationship between Billings and Miles City is very, very important, and if I could have your assurance on that, that that relationship will be continued, I would sure like to have it now, and then you can have my daughter after she graduates from med school. [Laughter.]

Secretary BROWN. We are in the process, and I do not want to seem like I am hesitating, but I am hesitating.

Senator BURNS. That is the signal I am getting, anyway. [Laughter.]

Secretary BROWN. Only because we are reorganizing out there, but Senator Burns, why do you not let me go back and find out exactly what the divisions are planning out there. I do not want to interfere with their strategic plan, but I will get back with you, sir.

Senator BURNS. That is fair.

Dr. GARTHWAITE. I would say our overall plan is to provide timely and geographic access for patients to the best of our ability.

[The information follows:]

### MILES CITY VAMC

The Rocky Mountain Network, located in Denver, Colorado, has initiated planning efforts by identifying four work groups to specially review services and programs in the areas of Long Term Care, Mental Health, Primary Care, and Surgery. Their work is in progress. To date, no final decisions have been made with respect to programs anywhere in the Rocky Mountain Network, including the VA facility in Miles City, MT. The work groups will be completing their reports early this summer and final decisions should be made by September 1, 1996. It may well be that an enhanced arrangement with the private sector in Miles City may ensure high quality care and better service to veterans at less cost than can be achieved by maintaining a full service inpatient program with extremely low demand. Other services such as long term care and primary care are expected to be provided at the Miles City facility.

We do hope to support increased VA health care efforts in the Billings, MT, area. There is a fairly large veteran population in Billings and we would like to provide outpatient medical services to them in a more convenient manner. It is not the Department of Veterans Affairs' intention to decrease service to veterans. Whenever possible, we want to enhance the services we are able to provide without increasing the cost of providing those services by making changes that improve our efficiency. The work groups in the Rocky Mountain Network will hopefully provide us with a number of actions which will enhance efficiency, maintain or improve the quality of care, and improve accessibility to care for our country's veterans.

Senator BURNS. This daughter of mine, I have to tell you a little story. She got reprimanded in your hospital up there. Her bedside manners were not too good, because she gave a guy a scorching, that she could not help him nor could the Good Lord above, as long as the guy keeps drawing on them cigarettes, and the doctor there thought that was not very good bedside manners. With Keely, there are no gray areas, I will tell you.

Senator BOND. I wonder where she gets that? [Laughter.]

Senator BURNS. From her mother. [Laughter.]

### VBA STRATEGIC PLAN

Senator BOND. Thank you very much, Senator Burns.

Mr. Secretary, Mr. Vogel has described the crisis mode, and we understand that the VBA does not have a strategic plan, has not had one, I guess, under the Government Performance and Results Act. A strategic plan is in the works for the VBA. When will that strategic plan be developed? Do you see the direction we are going to solve the problems, and do you know the outlines of that strategic plan now?

Secretary BROWN. I am going to ask Mr. Vogel to respond.

Mr. VOGEL. Senator Bond, we are described by the Melidosian Commission as not having a mature strategic plan. I am not sure the organization exists in America that has one that is fully mature.

The budget we submitted for 1997 for the education and the loan guaranty and the insurance programs are in accordance with GPRA guidelines. We will, in fact, submit the budget for 1998 for compensation and pension and for vocational rehabilitation in the same manner. Those are major programs in accordance with GPRA guidelines.

In your opening statement, Mr. Chairman, you mentioned that we could not attribute to the reduction in the backlog, if you will, or the improvement in timeliness, to anything particularly. You mentioned I think overtime and other changes. That is true.

As you work in a dynamic system, we are driven by services to veterans. We could not tell you, and I could not tell you exactly what happened between 1994 and the present, when we improved our timeliness by about 38 percent, how much of it was attributable to overtime, how much was attributable to a decline in work load and where the work load declines were, or more importantly, how much was attributable to IRM improvements, to reengineering or to our business practices.

We have in place now a business process reengineering which the GAO defines as a fundamental reexamination of the core business processes with an aim toward radical improvement. And with that our efforts essentially in compensation and pension—our critical area—we expect significant results.

Disability claims goals will guide our program and process change recommendations in the future. We will have quantifiable measures in place to measure program delivery successes.

We have a computer simulation model which will enable us to more accurately project the effects of legislation, the regulatory process and technology and human resource changes. It will improve the quality at a lesser cost, and be more proactive.

I think you will have in the future what we have been unable to provide before exactly what the payback is for an infusion of ADP technology. We all know that there is a payback, borne out by the results of our improvement in service. We are now taking the necessary steps to quantify the improvements.

[CLERK'S NOTE.—The following is provided to clarify the last witnesses testimony.]

### VBA STRATEGIC PLAN

The Veterans Benefits Administration (VBA) is in the process of compiling its strategic plan for the outyears. A team of individuals is assessing and analyzing the initiatives submitted by the five business lines (Compensation and Pension, Education, Loan Guaranty, Vocational Rehabilitation and Counseling, Insurance), the four Areas (Central, Eastern, Western, Southern) and the support offices (Chief Information Officer, Chief Financial Officer, Training, Executive Management and Communication, Human Resources). Their goal is to ensure linkage and integration of all initiatives, in support of VBA goals, values and measures. VBA's Business Line Plan is a result of the strategic planning process. While planning is an evolutionary process, a "final" Business Line Plan is scheduled to be presented to VBA's Strategic Management Committee (formerly known as the Policy Board) at their next meeting (currently set for 5/30/96). Subsequent approval by the Under Secretary for Benefits is scheduled to occur in mid-June. This product will be the basis for our fiscal year 1998 President's budget submission.

### REDUCING CLAIMS BACKLOG WORKLOAD VOLUME

The total volume of pending compensation and pension workload has been steadily reduced from 528,078 on September 30, 1993, to 484,589 on September 30, 1994, and 379,980 on September 30, 1995. There has been only a slight increase to 387,398 on April 30, 1996 despite considerable lost workdays related to two extensive furlough periods. Particular progress has been made in reducing the volume of pending original and reopened claims. During this same period there was a small decrease in original and reopened claims received. The bulk of the decrease in received claims, however, related to a one year moratorium on EVR processing reflected in an overall 724,000 claim decrease in income related issues for fiscal year 1995 compared to fiscal year 1994 (66 percent). Details are included in the following table.

| Category | Fiscal year 1994 | Fiscal year 1995 | Change (percentage) | Fiscal year to date April 1996 |
|---|---|---|---|---|
| Claims received: | | | | |
| Original compensation | 165,183 | 159,305 | −3.6 | 79,733 |
| Original pension | 77,448 | 73,439 | −5.2 | 40,449 |
| Reopened claims | 437,215 | 427,396 | −2.3 | 236,673 |

| Category | Fiscal year | | Change (percentage) | Fiscal year to date April 1996 |
|---|---|---|---|---|
| | 1994 | 1995 | | |
| Income | 1,074,700 | 361,354 | −66.4 | 414,660 |
| Total | 3,273,778 | 2,343,292 | −28.4 | 1,545,049 |
| Claims pending: | | | | |
| Original compensation | 68,637 | 59,342 | −13.5 | 52,182 |
| Original pension | 16,154 | 11,362 | −29.7 | 12,094 |
| Reopened claims | 163,452 | 123,744 | −24.3 | 116,340 |
| Income | 44,816 | 32,946 | −26.5 | 50,773 |
| Total | 484,589 | 379,980 | −21.6 | 387,398 |

## REDUCING CLAIMS BACKLOG

Senator BOND. Well, Mr. Vogel, has the number of claims gone down? You can tell us that.

Mr. VOGEL. The number of claims are down.

Senator BOND. How much? What percent?

Mr. VOGEL. It depends upon—and I hate to sound obtuse, but it depends upon the category. In gross numbers——

Senator BOND. Compensation and pensions, let us try.

Mr. VOGEL. Original disability compensation, reopen compensation claims is about the same level, but what came down markedly is regular pension work, including what we call an eligibility verification report, an EVR. By law, until recent change, the Secretary was obligated to ask every needs-based beneficiary to submit a report of what their income was and what it was projected to be.

Senator BOND. But I was interested in the numbers. You said there had been some decline, and I just wanted to identify——

Mr. VOGEL. I would be pleased to provide that for the record.

## BUSINESS PLAN REENGINEERING

Senator BOND. If you would provide that for the record I would be pleased to have it.

The business process reengineering is a process that you are now undertaking. When do you expect that to be completed?

Mr. VOGEL. Mr. Chairman, I am not sure of the exact timeline on that. May I submit that for the record, sir?

[The information follows:]

### BUSINESS PLAN REENGINEERING

VBA is currently in the midst of a multi-year business process reengineering (BPR) effort that will determine the most effective and efficient approaches to accomplishing the primary business missions of the Administration. BPR is an ongoing process and the BPR efforts integrate with the development of VBA Government Performance and Results Act (GPRA) business plans.

The Compensation & Pension and Vocational Rehabilitation implementation plans will be completed in September, 1996. The Education reengineering implementation plan will be completed in September, 1997. The Loan Guaranty implementation plan will follow in September, 1998, and the Insurance implementation plan in September, 1999.

Upon selection and approval of the business case in each of these program areas, implementation plans will be developed with the participation of affected stake holders. The implementation plans will result in initiatives being identified in the appropriate business line strategic plans. Those initiatives that require information technology support will receive high priorities in the Chief Information Officer's Application Development Program.

Senator BOND. I would also like if you could provide for the record an explanation that I really think goes back to the cart before the horse. You have spent $300 million on ADP technology, you are involved in a massive restructuring in the VBA, and there is not a strategic plan completed or a business process reengineering, and to me it is very difficult to understand why you do that before you decide how and where you are going to serve and what you need to be doing.

I would appreciate an explanation of that for the record, if you could.

[The information follows:]

## ADP TECHNOLOGY

The Veterans Benefits Administration (VBA) is in the midst of a new effort to apply business process reengineering (BPR) to each of its business areas. A new strategic planning process has been initiated that will clearly identify initiatives resulting from these BPR efforts.

Currently, information technology initiatives are focused on replacement of the C&P and Education payment systems from the old Honeywell technology to the new hardware and software platforms provided under VBA's Stage I procurement. In addition, efforts are underway to replatform all of VBA's other payment and non-payment systems from the Honeywell and Wang environment to the new Stage I environment that provides significant flexibility and advantages not found in the older technologies. Future information technology efforts in VBA will focus on results of the BPR efforts currently underway.

## BOARD OF VETERANS' APPEALS

Senator BOND. Let me move on to another area that was a major concern, and let me address this to the Secretary, or he can ask others to participate if he wants.

The Board of Veterans' Appeals, it is about $38 million, 527 full-time employees, seeking an increase of 50 staff levels. The Melidosian Commission noted that in its present role the Board of Veterans Appeals does not appear to be an effective vehicle for the fair, impartial, and timely processing of appeals. Given the availability of Court of Veterans Appeals to review the Board's final decision, the Board's current form of de novo review of regional office decisions may no longer be necessary or in veterans' best interests.

Mr. Secretary, why is the Board necessary now that VA has judicial review? Why should not the Board be abolished?

Secretary BROWN. Well, first of all I totally disagree with that assessment by the Commission. I happen to believe that it is in the veterans' best interests to have as many levels of review as possible. What we see here—let us just trace a claim through the adjudication process. The VA makes a decision on a veteran's claim. That veteran then receives a notice of that decision, and he or she has a right to appeal.

Once they file that appeal, the case is reviewed again. If it is denied, then it goes to the Board of Veterans Appeals. If it is denied by the Board, then it goes to COVA. We know that in that process there is an approval rate at every level, and it adds up to I think about 50 percent, so between the original decision and all the way through the process, it gets even better. We added another step, for instance, in there.

We have hearing officers now, and that increased the allowance rate, and so I am for a system that is responsive to the needs of veterans that will give them a better chance, as much chance as possible of getting a favorable response from the VA.

Senator BOND. Well, the Board of Veterans Appeals allowed 20.5 percent of the cases it reviewed in the first half of fiscal year 1996 and remanded another 42 percent. That means that almost two-thirds of the cases had errors in it and 13 percent of them had more than one remand. I would think that there is some interest in the veteran of getting a final response.

In 1995, the response time on the average was 763 days. As I said in my opening statement, 400 veterans had died. Somehow there has got to be some sense in this system, that there has to be a final adjudication. Justice delayed is justice denied. Somehow this system is taking far too long, and I would just ask you, if you do not want to abolish the Board of Veterans Appeals, where can you make some savings in time?

Secretary BROWN. I think we are doing that. First of all, it bothers me that when everyone interprets this 42 percent remand rate to errors, they are not errors, they are not substantive errors.

As Mr. Bauer pointed out, 70 percent of them had to do with some deficiency in the examination, and that deficiency could be based upon a decision that was just made 2 weeks ago, and so when the Board receives it, it has to remand it, and with respect to timeliness in 1991, the Board response time was about 139 days, and we are moving back in that direction. I am very, very pleased with where we are.

In 1994 the response time was 781; in 1995, 763; 1996, 675; and we expect 545; and with this, if you help us out with this additional 50 Board members and give us an opportunity to put a lot of the plans that we have in place, we think we can bring that time down to something that is respectable.

We know this cannot last, but it is moving in the right direction.

Senator BOND. Obviously, the staff has gone up in those areas, but I still think that in developing the strategic plan you need to address how the system can be made more efficient.

Senator Mikulski.

### REACHING OUT TO PRIVATE SECTOR

Senator MIKULSKI. This has, as you know, been a continuing issue for a number of years, and my question is, does the VA reach out to the private sector?

You know, insurance claims, and I know this, because the claims are being processed by the millions every day in the United States of America, they do not always take 3 years, and a court of appeals, and 50 more lawyers and so on, and as much as I love lawyers—I believe my chairman is one—lawyers invent process. They believe in due process. They are obsessed with due process. They are crazy about due process, and they have never met a process they did not like and wanted to extend, amplify, and even want to have an appeal to that process.

Now, I am in no way minimizing the right of the Veterans Board of Appeals. That was established exactly as you said, Mr. Bauer, to get rid of a paternalistic attitude and ensure due process for them, but what can we do, really, to move the processes with the same kind of approach that the private sector does, and are we reaching out to the private sector?

Secretary BROWN. Yes, ma'am. What we did, I guess about 1 year or so ago, we pulled in—you mentioned Social Security. We pulled in people from Social Security, people from the private sector, attorneys, to ask them to go and look at our whole process.

We went to the Board of Veterans' Appeals. I even had the former chairman, Sid Schuman, to come back in to help us out, so we were reaching out to many, many people to capitalize on their expertise. We had people in from the court to see how they went about docketing records, because the court has a tremendous backlog too, different article I and article II courts, so we had those in to try to help us.

Senator Mikulski, we now are in transition. This is a system that is in transition. It is a system that went from a very informal system to one that is moving more and more rapidly toward a formalized system.

Once we get the courts involved—you mentioned lawyers. Lawyers are everywhere now, and that is one of the reasons why I would like to at least keep it as informal as we possibly can, and the Board of Veterans Appeals, as part of that informality, once it leaves the Board it goes straight to the courts, and I would tell you, ma'am, if we got rid of the Board of Veterans Appeals, and 41,000 cases had to go to the Court of Veterans Appeals, it would put them out of business. There is no way they could handle anything like that unless they vastly expanded their whole network.

So I think that if you give us another year, and I am putting these guys on the spot, but if you give us another year, I think you are going to see a vast improvement over these numbers. I think we are on target now in both areas.

## REDUCING ADJUDICATION REGULATIONS

Senator MIKULSKI. Do you think reducing the number of requirements and regulations would be a step in the right direction?

Secretary BROWN. A lot of people said that. That would do it, because here you remember we have a very user friendly system. No way in the world a veteran can come to the VA today and tell you, I want to be service connected for the Moon, and what the VA has to do, it has to pull its records, and look at the service records and see if the Moon is in them.

If it is not in there they say, well, we reviewed the service records and there is no evidence he was on the Moon, therefore, we deny the case, send him a letter, he can appeal that if he wants to, but—now that sounds ridiculous, but quite frankly, we like that informality about the system, because it gives veterans every opportunity to get the benefits that they feel that they are entitled to.

Senator MIKULSKI. And I appreciate that, Mr. Secretary, and again, looking to Dr. Kizer and the use of the medical team and Mr. Bauer, who obviously wants to create a more clear and more rapid response process, the whole issue of, No. 1, a new state of mind, or new culture which says that we have to move this, and then also, No. 2, that there are issues involved here that are dated, I do not know what classification system is being used to identify incapacity.

When you, who bear a permanent wound of war, had to go through that, we had certain kinds of classifications that were really based upon 1946 and 1955 rehab models, you know, that someone even enduring the same horrific injury that you did would be experiencing a very different type of rehabilitation, probably, and with now the changing of an economy to an information age, can do jobs and be fully employed that they would not have been.

And what I am saying is, we need a new look. We need to look at the steps. We need a new look at the regs. We need to look at what the rehabilitation, and so on, really means. We need a new classification system, and then along with the shrinking of the time, that way we do not get into overpayment, the people who do deserve payment get it, and they get it when they need it, not when they are sicker and near financial bankruptcy because they were going into their savings and so on.

That is all I think we are asking. Would you not agree, Mr. Chairman?

Senator BOND. That is correct, Senator Mikulski.

### MARYLAND OUTPATIENT CLINICS

Senator MIKULSKI. Mr. Chairman, I do have a few more questions. I would like to just talk about Maryland for a moment, but Maryland is also an example, we have two very functioning outpatient clinics, one in Dorchester County, MD, on the Eastern Shore, in an area I know the chairman is familiar with, and, of course, the famous Cumberland Clinic. I know that each one could face a space dislocation for a variety of needs.

Now, let me tell you what happens. The veterans are panic-stricken, so we have not managed their fear. This then goes to this. No. 2, by the time we get around to seeking RFP's it is now May. In one instance, they have to be out by November, so there was not—I mean, it takes time to find space.

And No. 3, the issue of recruiting competent professionals in rural areas, which I know is across the board.

My question is, then, looking at the Maryland situations, what are we doing to manage fear, get the best space, recruit the physicians, but are those then lessons learned, what you are facing as you move to an outpatient model, because it seems that is a need for a new culture, too.

Manage the concern, early warning and space needs, and No. 3, the recruitment of competent professionals in an underserved area, exactly where we could put outpatient clinics and never could have those acute areas.

Secretary BROWN. With respect to the clinic there in Cumberland, we expect to have that—first of all, we are 100 percent committed to it. We expect for it to be a done deal in November, by November, whether it is going to be at that location or another location, and so that commitment is still there. Veterans are not going to lose anything. In fact, while it is difficult to recruit up there, we do not expect to have any problem, because if necessary we will bring the doctors down from our adjoining hospitals.

But you did touch something in terms of how well we are managing, and how well we are getting the message out. One of the things I tried to do when I first came here is to say that we have got to keep the people who are interested in what we are doing informed, and they are the Members of Congress, the veterans community, and our VSO's, those three areas, and while it has been going slow, I think we are moving in that direction.

We are not doing it good in all locations, but with this reorganization plan, and rather than dealing with the 172 or 900 individual facilities, we are going to be dealing with 22 managers that are out there, and we hope we can change the mindset to make sure that the people that need to know are not caught by surprise.

I think that is it. Anyone who has something to do with that system should never be surprised about what is going on, and that is the standard that we are working toward.

Dr. GARTHWAITE. I would reiterate that. I spent 1 hour this morning with the chiefs of medicine from around the VA system, and you can never communicate enough, and we had a very substantive dialog, and it was very hard to break it off.

There are many other stakeholders both within the system and outside the system, and sometimes when you talk to someone you think represents a stakeholder there is no communication within that stakeholder's organization. You think you have touched base with someone but they do not communicate it in their chain of command. Then we are disappointed because we tried to communicate. We are learning and now make sure we hit all parts of an organization so that we do not run into that type of noncommunication with other organizations we have tried to communicate with.

In terms of physician recruitment, it is difficult in some areas. I think the current trends in medicine will help our recruitment a little bit. We have liberalized to some degree, paying bonuses in geographic areas to recruit primary care physicians, where competition for primary care providers in America has significantly intensified over the last couple of years because of managed care.

Senator MIKULSKI. Mr. Chairman, I think that takes care of my questions for now.

Senator BOND. All right. There will be more questions for the record. I am going to submit most of mine for the record.

### NEED FOR COMMUNICATION

Senator BOND. Unfortunately, here is a May 2 clipping from Poplar Bluff, and doctor, you were talking about the need for communication. The headline says a patient was on the table when VA stopped all surgery. Now, that is not a good way to do it. They had the IV hooked up. That one was not handled very well, I would have to say.

Dr. GARTHWAITE. We will get some facts on that, but my experience with headlines is that frequently there is more than the headline portrays. You may have had that experience also.

I would be aghast to think that someone came in and said, stop the surgery now.

Senator BOND. According to the report, that is what happened.

Dr. GARTHWAITE. We will look into that.

[The information follows:]

### POPLAR BLUFF SURGERY

The patient in question was scheduled for an outpatient circumcision under local anesthesia. After the announcement of inpatient surgery being closed, the Associate Director for Nursing went to the operating suite and spoke with the patient. The patient was agreeable to having his surgery re-scheduled at a local hospital of his choosing at VA expense. Performing ambulatory (outpatient) surgery in a formal operating room setting is one of the major issues of concern involving the effective and efficient use of human and financial surgical resources at the facility.

### MEDICAL CARE MANAGEMENT SAVINGS

Senator BOND. Let me ask just a couple of quick ones, and maybe you can submit this for the record, Mr. Secretary. When VA makes a cost-saving improvement such as depot closures and VISN formularies, where are those cost savings reflected in the budget?

The pharmaceutical budget increases significantly by over $140 million this year on page 2–4, yet we have heard about $44 million in savings from implementation of the inspector general's recommendations on pharmaceuticals. Where do you see the savings in the budget?

Secretary BROWN. I am going to ask Mr. Catlett to respond to that, but before I do I want to thank the committee for its support in giving us the opportunity to retain some of the funds that we get.

As a general rule, most of the savings we generate go right back to the Treasury, but as a result of the 1996 appropriations, or—I am sorry, I take that back. I am hoping that you will give us the opportunity to retain some of the savings that we generate.

For instance, in third party reimbursement we collect about $600 million, and all of that goes back to the Treasury, and this legislative initiative will allow us to retain 25 percent of the category A's and 100 percent of the category C's. That will start putting us in the right direction.

I am going to ask Mr. Catlett to respond to your question.

Mr. CATLETT. Mr. Chairman, in terms of the savings, that has been a long outstanding issue with your committee and with many. We had last year in the 1996 budget a $335 million savings initiative, we called it. We lumped all those savings proposals together in that estimate.

With this 1997 budget, we did not identify any amount for savings specially, but with a $448 million increase in medical care, we are absorbing a portion of current services, however you define that, in inflation and the cost of increased pay.

From folks on the Hill to the OMB and others, we will have a big debate about how much that is, but clearly we need more than $448 million to meet the current level of service that we provide, so efficiencies are built into our request of $448 million.

It does not mean that we are not trying to deal with each one of those inspector general initiatives. Dr. Kizer's philosophy is, let the local folks manage and make those decisions. We will give them targets. We will give them a level of demand they have to meet and a level of quality and a resource level they will have to meet.

So we are trying to shift to local decisionmaking. We are not trying to minimize anything the inspector general or the GAO says; we need to do a better job of showing you where there are savings, but clearly our budget reflects it. We just do not itemize each one of them.

Senator BOND. I appreciate that.

### MORATORIUM ON MAJOR CONSTRUCTION

Mr. Secretary, you might again take a look at this and provide an answer for the record. I mentioned our position on major construction. The GAO has recommended in the past a moratorium on major construction pending full implementation of the VISN reorganization.

I think major construction is premature at this point until the VA is assured that the restructured VA medical system will need these refurbished and enhanced facilities, and we would welcome suggestions and comments you have that would indicate why that is not so.

Secretary BROWN. We will certainly respond to that.

[The information follows:]

### MORATORIUM ON MAJOR CONSTRUCTION

The Department does not believe that a moratorium on major construction would be appropriate. VA cannot effectively change from an inpatient focused system to a more contemporary managed care system without significant changes in the system's facility infrastructure. These changes cannot be made if capital plant adjustments are limited to small minor construction and maintenance projects. Ambulatory care facilities, nursing units that are environmentally acceptable and safe and economically efficient system infrastructure require a reasonable balanced expenditure between major, minor, and non-recurring maintenance.

As the VA health care system changes, we must make careful choices about improving VA infrastructure. The projects developed and included in the fiscal year 1997 budget request were selected from among the VA's highest priority projects. These projects are consistent with current local program and health care delivery planning.

### SUBMITTED QUESTIONS

Senator BOND. With that, we will submit the balance of the questions for the record.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

### QUESTIONS SUBMITTED BY SENATOR CHRISTOPHER S. BOND

#### MEDICAL CARE STAFF REDUCTIONS

*Question.* VA's budget proposes a reduction of 5,000 staff in fiscal year 1997 from the 1996 levels. How will this reduction be achieved, will there be RIF's, what type of staff reductions are planned (e.g., administrative staff, doctors, nurses, etc.), and how will these staff reductions impact patient care?

Answer. Actual FTE levels will be based on restructuring decisions made by all 22 network directors. Although network directors are currently in the process of planning and decision making, specific personnel actions including any RIF actions will not be known until this fall. The budget presented therefore does not reflect these decisions. The 5,000 FTE reduction resulted from estimating a supportable level of employment that could be funded from the request after equitably distributing resources between personal services and all other operating costs.

#### FURLOUGHS

*Question.* Earlier this year, we heard many stories about possible furloughs in VA hospitals. What is the Department's policy with respect to furloughs, will there be any furloughs this year, and if so why?

Answer. The Department's policy is there will be no furloughs this fiscal year (1996).

## EDUCATION AND TRAINING

*Question.* VA's budget includes about $800 million for education and training physician residents and other health professionals. This is one area of your budget which shows no decrease. VA proposes to support the same number of physician residents and fellows (about 34,000), and students (about 74,000) as it has for many years. A recent study by the Pew Health Professions Commission found that the number of incoming medical school students should be reduced as much as 25 percent by 2005. Why isn't VA's budget proposing any decreases in this area?

Answer. The recommendation of the Pew Health Professions Commission that a number of U.S. medical schools be closed was one of the most provocative recommendations of their report. Closing medical schools is one option among many in the national debate about reducing physician surplus in the U.S. I have appointed a blue ribbon external Advisory Committee, chaired by Dr. Robert C. Petersdorf, to advise me on what VA's future contribution to overall physician training should be. This committee will examine national physician manpower studies and projections in the context of VA needs. They will report to me shortly and make recommendations for VHA graduate medical education in future academic years. I plan to circulate their report for review and comment so that we will be in a position to make management decisions for the academic year beginning in July 1997.

Title 38 U.S.C. mandates that VA assist in the training of health professionals for its own needs and for those of the Nation. The Education and Training Summary Budget to which you refer includes both direct (student stipends and benefits) and indirect costs associated with the clinical training provided to these students and residents at VA facilities. The current level of funding support for VA's "education mission" contributes directly to patient care and to the quality of that care. While over 100,000 students of many disciplines participate in VA patient care as part of their clinical health professions training every year, only about 12,000 positions are funded by VA. These 12,000 positions are for advanced medical residents and other health professionals who already have their health professions degrees and in many cases are qualified to practice in the community. These health professionals contribute significantly to VA's ability to deliver cost effective and high quality patient care to veterans.

While VA faces future funding limitations in all areas of patient care, it is important to think of VHA's Health Professions Education Budget as part of the patient care budget and not as an expenditure for a theoretical "education" goal. The education mission of VA "* * * to train for VA and the Nation" is realized mostly through the participation of VA in training for the other 88,000 students who rotate through VA hospitals each year without any remuneration. The salaries for the 12,000 positions are a direct patient care expense. Whether VA will be able to sustain this portion of the budget or whether this will continue to be a cost effective way to deliver patient care will be subjected to continued scrutiny as budgetary pressures increase. Certainly, reducing VHA's Health Professions Education Budget will result in increased cost in other portions of the medical care budget to maintain patient care.

Downsizing of the VA commitment to graduate medical education as part of a planned national response to changing manpower needs may yield lower annual VA cost for resident salaries. However, since patient care needs will not diminish, VA should expect higher cost for physicians, nurse practitioners and physician assistants as substitute caregivers.

*Question.* Dr. Kizer has indicated that he believes VA funds too many residencies in specialty training. Do you plan to reduce the number of residencies in specialized areas, and how much savings will accrue as a result?

Answer. It is premature to specify exactly how we will change VA's Graduate Medical Education (GME) mix at this time. After I receive the report from the Residency Realignment Advisory Committee, I plan to circulate it for review and comment so that we will be in a position to make management decisions for the academic year beginning in July 1997.

*Question.* Psychologists are among the health professions supported by the Education and Training program. The practice of psychology is particularly suited to outpatient primary care settings and focuses on behaviorally-based medical problems (e.g., smoking, substance abuse, obesity) to reduce mortality and morbidity and the need for hospital based services. Psychology with its emphasis on prevention reduces the need for hospitalization and therefore reduces health care costs. As the VHA moves away from hospital based care do you intend to increase the emphasis on the Education and Training for psychologists and other health care professionals whose work fits so well with treatment for veterans in outpatient settings?

Answer. VHA recognizes that many of the health professions, including psychology, have changed over time and have become more focused on health promotion, disease prevention, and outpatient care. Through the PRIME Program (Primary Care Education for Medical Residents and Associated Health Professions Trainees), implemented in Academic Year 1993–94 (fiscal year 1994), VHA has increased funding of those disciplines specifically involved in primary care. Trainees in the following associated health disciplines are funded through the PRIME Program: advanced practice nursing (clinical specialists and nurse practitioners), audiology/speech pathology, dietetics, health care administration, medical records administration, nursing administration, occupational therapy, pharmacy, physical therapy, physician assistant, psychology, and social work.

In the very near future, the Under Secretary for Health will establish an Associated Health Education Commission to advise him about the present scope and structure of VHA's Associated Health Education Program and recommend changes to ensure that the program remains effective and relevant for the future.

*Question.* Within the Education and Training Program's Associated Health Professions line item are funds for internships for various categories of health professionals. Please list each of the health professions that are included in the Associated Health Professions line item, the number of interns for each, and the funding which supports each health profession internship program for each year beginning with fiscal year 1990.

Answer. See attached spreadsheet.

Department of Veterans Affairs
Veterans Health Administration
,Office of Academic Affiliations
Funded Associated Health Professions

| Associated Health Professions | FY 1990 | | FY 1991 | | FY 1992 | | FY 1993 | | FY 1994 | | FY 1995 | | FY 1996 | | FY 1997 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No of Trainee Positions | Funds | No of Trainee Positions | Funds | No of Trainee Positions | Funds | No of Trainee Positions | Funds | No of Trainee Positions | Funds | No of Trainee Positions | Funds | No of Trainee Positions | Funds | No of Trainee Positions | Funds |
| Advanced Practice Nurse | 170 | $393,423 | 153 | $334,553 | 160 | $353,880 | 171 | $348 560 | 174 | $350,117 | 233 | $465 307 | 245 | $485,740 | 229 | $476,36 |
| Advanced Practice Nurse (Post-Masters) | | | | | | | | | 2 | $67 820 | 3 | $101,730 | 3 | $101,730 | 3 | $101,73 |
| Audiology/Speech Pathologist | 217 | $775,558 | 221 | $789,854 | 200 | $861,200 | 199 | $856,894 | 159 | $684,654 | 226 | $973,156 | 237 | $1,020,522 | 246 | $1,059,27 |
| Blind Rehabilitation Specialist | 44 | $106,632 | 44 | $106 632 | 44 | $106 632 | 44 | $105 082 | 44 | $105,082 | 44 | $105,082 | 44 | $102,431 | 44 | $102,43 |
| Clinical Pharmacist (Post-doctoral) | | | | | | | | | | | 1 | $36,601 | | | | |
| Dietetic Internship | 103 | $391,714 | 103 | $391,714 | 103 | $740 467 | 104 | $747 204 | 104 | $747,204 | 112 | $809,812 | 114 | $823 864 | 116 | $832,3 |
| Geropsychology Fellowship (Post-doctoral) | | | | | | | | | 6 | $219,606 | 10 | $366,010 | 10 | $366 010 | 10 | $366,0 |
| Health Care Administration (Masters) | | | | | | | | | | | 35 | $132,773 | 43 | $154 281 | 47 | $152,8 |
| Health Services Research & Development | 12 | $112,156 | | | | | | | | | . 16 | $585,616 | 16 | $585 616 | 16 | $585,6 |
| Maxillofacial Prosthetist | 1 | $6,823 | 1 | $6,823 | 1 | $8 733 | 1 | $8,733 | 2 | $17,466 | 2 | $17,466 | 2 | $17 466 | 2 | $17,4 |
| Medical Records Administration (Masters) | | | | | | | | | | | 5 | $14,103 | 7 | $18 837 | 12 | $45,7 |
| Nurse Anesthetist | 27 | $60,152 | 43 | $64,368 | 39 | $122,490 | 50 | $127 665 | 46 | $116,410 | 44 | $167,643 | 37 | $166 416 | 46 | $161,5 |
| Nurse Practitioner | | | | | | | | | | | 127 | $284,424 | 183 | $427 269 | 232 | $553,0 |
| Nurse-Postmaster Fellowship | | | | | | | | | | | | | | | | |
| Nursing Administration | 12 | $72,336 | 8 | $51,670 | 8 | $51,670 | 7 | $46,503 | | | 44 | $110,286 | 52 | $120 088 | 42 | $88,9 |
| Occupational Therapist-Post Masters | | | | | | | | | 2 | $80,284 | 3 | $90,426 | 3 | $90 426 | 3 | $90,4 |
| Occupational Therapy | 66 | $147,774 | 74 | $192,554 | 71 | $158,969 | 82 | $178,610 | 82 | $178,610 | 101 | $219,775 | 105 | $227,183 | 110 | $235,6 |
| Patient Health Education | 10 | $30,679 | 3 | $6,718 | 3 | $6,718 | | | | | | | | | | |
| Pharmacy Fellow (Post-doctoral) | | | | | | | | | | | | | 1 | $36 601 | 1 | $36,6 |
| Pharmacy Resident | 82 | $1,765,460 | 85 | $1,830,050 | 85 | $2,058,785 | 88 | $2,131,448 | 89 | $2,347,286 | 144 | $3,797,656 | 166 | $4 714 087 | 177 | $5 049 |
| Physical Therapist | | | | | | | | | | | 24 | $53,736 | 30 | $64 590 | 37 | $79,6 |
| Physician Assistant | | | | | | | | | | | 52 | $103,448 | 62 | $133 486 | 83 | $225 7 |
| Psychology Intern | 344 | $4,699,020 | 350 | $5,078,157 | 351 | $5 100 822 | 342 | $5,704 416 | 332 | $5 535 406 | 372 | $6,315,936 | 386 | $7 043 192 | 393 | $7 152 9 |
| Psychology Post-Doctoral | | | | | | | | | 2 | $73,202 | 5 | $183,005 | 5 | $183 005 | 5 | $183 0 |
| Social Work Post-Masters | | | | | | | | | | | 3 | $90,426 | 3 | $90 426 | 3 | $90,4 |
| Social Worker | 323 | $1,144 662 | 407 | $1 444,678 | 406 | $1,657,580 | 412 | $1,682 252 | 421 | $1,771 320 | 514 | $2,101 676 | 559 | $2,286 716 | 571 | $2 336 |
| TOTAL: | 1,411 | $9,706 393 | 1 492 | $10,297,971 | 1,471 | $11 227,966 | 1 500 | $11 937 367 | 1 465 | $12 274,467 | 2,120 | $17,126 293 | 2,313 | $19 259 962 | 2,428 | $20 023 |

## MEDICAL ADMINISTRATION

*Question.* VA's medical administration appropriation request is $62 million and 610 "MAMOE" FTE. Dr. Kizer is to be commended for aggressively downsizing the Washington medical administration, reflecting the need for far fewer Washington-based medical staff. Yet 610 Washington-based medical administration staff—none of whom is involved with patient care—is still quite a large bureaucracy. What are the long-term plans for the number of Washington-based staff, in view of the decentralization of the VA medical system to the field, and do you anticipate additional reductions to central office medical administration staff in fiscal year 1998 and beyond?

Answer. Thank you for acknowledging Dr. Kizer's efforts in downsizing headquarters. Average employment is requested at 600 FTE with a transfer of 10 IRM FTE and associated funds from the GOE appropriation for a total of 610 FTE. At the present there are no specific plans to reduce the MAMOE FTE below the 610 reflected in the budget. The 610 staffing level has actually been achieved during fiscal year 1996 by conducting a Reduction in Force early in the fiscal year. As a result, headquarters office has been streamlined and reduced 25 percent in 1996 from the staffing level authorized in 1995. MAMOE staffing will continue to be reviewed to ensure that adequate and not excessive staff are available to support not only the medical facilities but also the Department and President in accomplishing administrative functions that lead to quality care for the nation's veterans.

## LONG-TERM CARE

*Question.* VA's budget for non-institutional long-term care—such as hospital-based home care, adult day health care, home health aide services, and community residential care—is virtually straight-lined for fiscal year 1997, totaling $104 million. Care in non-institutional settings is often far better for the patient, and far less expensive. VA's budget request for institutional long-term care totals $2.15 billion. Couldn't VA care for more patients by shifting more resources to non-institutional long-term care from institutional long-term care programs?

Answer. As VA users age, their need for extended care increases. In the next year, each VISN will develop a long-term care plan that will consider the need for nursing home care, assisted living, and home and community-based care.

From this analysis, we will determine if any additional nursing home beds are needed. To the extent that any additional nursing home care beds are needed, priority will be given to expanding the Community and State Nursing Home Programs.

Our current projection methodology only considers potential nursing home care requirements. VA has determined such an approach is inadequate because it ignores the use of home and community-based services which are alternatives to institutionalizing the older, chronically ill and disabled population. VA is in the initial stages of revising its planning models to reflect the full continuum of extended care services and settings. VA will provide extended care services at the levels permitted within appropriated funds as part of the continuum of managed care services for the highest priority veteran categories.

## PHARMACEUTICALS

*Question.* VA's budget estimates an increase of almost 12 percent for drugs and medicines in fiscal year 1997, for a total of $1.33 billion. Part of that increase ($31 million) is associated with GATT pharmaceutical patent extension. However, what explains the balance of the increase, particularly in view of cost-saving measures VHA apparently is implementing, such as regional formularies?

Answer. There are at least four reasons why pharmaceutical expenditures will continue to grow in the new VHA. First, the transformation to primary care/ambulatory care treatment models will increase the utilization of pharmaceuticals. Pharmaceuticals represent the primary toolbox of providers in these models. We expect to see greater utilization of pharmaceuticals in these models and, in fact, are seeing increased utilization. Second, through the creation of a VHA Pharmacy Benefits Management product line, whose primary goals are the appropriate use of pharmaceuticals and a reduction in overall health care costs, we anticipate increased expenditures for pharmaceuticals through increased utilization notwithstanding efficiencies being concurrently introduced to better manage them. Third, a five-year cycle of Federal Supply Schedule (FSS) contracts for pharmaceuticals were due to expire on December 31, 1995. Because of the changes anticipated with implementation of the Federal Acquisition and Streamlining Act of 1994, FSS contracts were extended two years. However, the first year of the FSS extension was considered the first year of a new contract period for purposes of Public Law 102–585 (the Veterans Health Act of 1992). This stipulation resulted in a recalculation of federal ceiling prices for drugs covered under the law with a corresponding increase in contract prices. Fourth, the approval and utilization of new therapeutic modalities. For example, the current estimate on the financial impact of using the recently approved protease inhibitors in our HIV patient population is approximately $30 million annually.

### PATIENT SATISFACTION

*Question.* The budget submission page 2–13 includes information on patient satisfaction. The customer service standard score for inpatients in psychiatry is only 68 percent. Why does psychiatry score so low?

Answer. There are two critical issues that must be kept in mind when interpreting the level of satisfaction among VA psychiatric inpatients: (1) the issue of inappropriate comparisons, and (2) the issue of measurement standardization.

*Inappropriate (apples-to-oranges) comparisons.*—The satisfaction scores among VA psychiatry patients appear to be drawing attention in large part, if not exclusively, because of their contrast with the scores of medical and surgical patients. This is not an appropriate comparison. To interpret the higher problem scores among psychiatric patients as indicative of generally "worse" care assumes that the groups being compared are equivalent at baseline on all other dimensions that might affect the outcome measure. This is almost certainly not the case. Previous research indicates general life satisfaction has a modest but statistically significant impact on patients' evaluations of the medical care they receive. Happier people are happier with their medical care as well as the other aspects of their lives. Therefore, if we assume that psychiatric inpatients are less satisfied with life in general than are non-psychiatric inpatients, then psychiatric patients' more gloomy outlook on life in general may account for their more negative feelings about their medical care. Such a difference would probably also be observed if you compared psychiatric patients' with any group of non-psychiatric patients regarding satisfaction with work, interpersonal relationships, and life in general.

When comparing the level of satisfaction among psychiatric inpatients at one facility with the level of satisfaction among psychiatric inpatients at another facility using the same measures, then the "general life dissatisfaction" factor is held constant, the playing field is level, and the comparison is appropriate: apples-to-apples. Any differences in scores under those circumstances may be more reliably attributed to differences in the patients' experience and not to personal differences in the patients themselves. This, of course, is how the data from the National Customer Feedback Center (NCFC) survey was intended to be used: to compare facilities within departments (medicine, surgery, psychiatry)—not between departments. To compare psychiatric patients with medical or surgical patients is an apples-to-oranges exercise and will lead to inappropriate conclusions.

*Measurement standardization.*—Whether or not the observed level of satisfaction among VA psychiatric inpatients is "high" or "low" can only be determined by placing the VA score in an appropriate context. In this instance, "appropriate context" means: (1) using the same questionnaire, and (2) comparing VA psychiatric patients with some other group of psychiatric patients with roughly the same demographic characteristics and mental health status. No such private sector benchmark comparison data is available to indicate whether an aggregate customer service standard problem score of 68 for VA psychiatric patients is "good" or "bad". Indeed, the VA database of satisfaction among almost 7,000 psychiatric inpatients is likely the largest such database in the country at this time.

### ACTIVATIONS

*Question.* In fiscal year 1997, VA anticipates there will be numerous construction projects completed and ready for activation, totaling more than $350 million. In the past, VA has requested a separate line item for such "activations." Will all the projects planned to come on line in fiscal year 1997 actually do so, how will such decisions be made, how can VA justify not activating new projects—which were built at great expense to the taxpayer—even if it means redirecting funds from within the total available? Please provide a list of which projects will be activated in fiscal year 1997, compared to all projects which will be ready for activation in fiscal year 1997. Were all projects planned for activation in fiscal year 1996 activated?

Answer. The fiscal year 1997 Medical Care request does not include "line item" requests for the activation of specific projects. As part of the VA's restructuring to VISN's, activation requirements will be a part of each Network's planning process. We believe most activation funding will be made by each Network as they decide whether or not to fund projects from their overall fiscal year 1997 budget allocation.

Some projects, however, may receive funding based on corporate decisions made as VHA enters a transition period in moving towards a capitation-based resource allocation system for fiscal year 1998. VA management will review previously planned activations and determine any special resource needs on an individual basis. During this period, a Capitation Advisory Panel work group has been established to determine how this should be accomplished. Any resources that are provided in this manner will reduce the overall level of dollars that remain available for distribution to the Networks. The attached listing provides activation estimates by project.

The staff previously assigned the responsibility of allocating and tracking activations resources were the former Regional Construction Managers. Following a reorganization which began in November, 1995, those staff have been replaced by VISN's, or Networks. Based on the information we have been able to obtain, activations are expected for the projects originally identified for fiscal year 1996. However, some activations planned for 1996 may slip. This is due to the late receipt of the 1996 appropriation and the significant funding delay (after August 1, 1996) for appropriation language-specified obligations for equipment and land and structures (Non-recurring maintenance). We are currently working with the network directors on these funding decisions.

02/02/96

FY 1997
DETAIL PRINTOUT BY PROGRAM
(dollars in thousands)

| Facility | Title | ACTNIS | Program | FTE | TOTAL RECURRING $ | TOTAL NON-RECURRING $ | TOTAL $ |
|---|---|---|---|---|---|---|---|
| ANCHORAGE, AK | VA/AIR FORCE J/V ELMENDORF AFB PHASE II | 363011 | MAJOR | 13.0 | 1,007 | 3,248 | 4,255 |
| ANN ARBOR, MI | PARKING GARAGES | 506827 | | .0 | 96 | 119 | 215 |
| ANN ARBOR, MI | CLINICAL ADDITION PH-3 CLINICAL ADDITION | 506E27 | | 71.0 | 5,518 | 39,636 | 45,154 |
| ATLANTA, GA | CLINICAL ADDITION (PHASE III) | 508D18 | | .0 | 248 | 15,335 | 15,583 |
| BALTIMORE, MD | 120 BED NURSING HOME | 512045 | | 53.0 | 3,603 | | 3,603 |
| BOSTON, MA | AMBULATORY CARE ADDITION | 523026 | | .0 | | 5,085 | 5,085 |
| BROOKLYN, NY | OUTPATIENT ADDITION | 527027 | | .0 | 657 | 7,025 | 7,682 |
| BROOKLYN, NY | MOD KITCHEN & SATELLITE DINING AREAS | 527036 | | .0 | 304 | 1,155 | 1,459 |
| COLUMBIA, MO | AMBULATORY CARE ADDITION | 543005 | | 12.0 | 753 | 3,561 | 4,314 |
| DALLAS, TX | CLINICAL ADDITION | 549085 | | 45.0 | 7,405 | 51,876 | 59,281 |
| HAMPTON, VA | AMBULATORY CARE ADDITION | 590064 | | .0 | 78 | 4,027 | 4,105 |
| HONOLULU, HI | NEW MEDICAL CENTER & RO (PARKING) | 459801 | | 8.4 | 1,387 | 321 | 1,708 |
| HONOLULU, HI | NHCU,CENTER FOR THE AGING | 459C01 | | 13.0 | 879 | 881 | 1,760 |
| HUNTINGTON, WV | RESEARCH ADDITION BLDG. 5 | 581053 | | .0 | 49 | 494 | 543 |
| INDIANAPOLIS, IN | CLINICAL IMPROV. (REMODELING) PH-V) | 583042 | | .0 | | 4,051 | 4,051 |
| LAKE CITY, FL | ADDITIONAL 120 BED NHCU | 594058 | | .0 | | 917 | 917 |
| LONG BEACH, CA | STRUCTURAL SEISMIC CORRECTIONS(OVERVIEW) | 600099 | | .0 | 42 | 9,645 | 9,687 |
| LYONS, NJ | 180 BED PSYCH BLDG. (PH I) | 604086 | | .0 | 295 | 3,036 | 3,331 |
| MARION, IL | OUTPATIENT/CLINICAL ADDITION | 609019 | | .0 | | 250 | 250 |
| MEMPHIS, TN | SEISMIC CORRECTIONS PHASE 1 | 614811 | | .0 | 49 | 32,337 | 32,386 |
| MUSKOGEE, OK | REPLACEMENT BED BUILDING | 623053 | | 7.0 | 661 | 3,692 | 4,353 |
| NEWINGTON, CT | MEDICAL CENTER MODERNIZATION - PHASE 2 | 627E32 | | 15.0 | 1,164 | 5,206 | 6,370 |
| NORTH CHICAGO, IL | ENVIROMENTAL IMPROVEMENTS (PH-2) | 556C55 | | .0 | 196 | 7,106 | 7,302 |
| PALO ALTO, CA | SEISMIC CORRECTIONS/DOM-DARU | 640210 | | .0 | | 270 | 270 |
| PALO ALTO, CA | REPLACE CLINICAL/BED TOWERS (PHASE 4) | 640G42 | | .0 | 1,270 | 63 | 1,333 |
| PHOENIX, AZ | AMULATORY CARE ADDN. NEW BUILDING (PH 1) | 644A12 | | 18.0 | 1,852 | 8,276 | 10,128 |
| PORTLAND, OR | RESEARCH ADDITION | 648073 | | 3.0 | 194 | 3,747 | 3,941 |
| PRESCOTT, AZ | 60 BED NURSING HOME CARE CENTER | 649117 | | 58.5 | 3,768 | 1,257 | 5,025 |
| RENO, NV | REPLACEMENT BED BUILDING | 654034 | | .0 | 19 | 11,672 | 11,691 |
| SALT LAKE CITY, UT | RENOVATE BUILDING 1 (RENOV. PHASE 2) | 660839 | | .0 | | 515 | 515 |
| SEPULVEDA, CA | SEISMIC CORRECTION (PH IV) TELEPHONE BLD | 665E52 | | .0 | 26 | 1,715 | 1,741 |
| SEPULVEDA, CA | SEISMIC CORRECTION (PH III) BOILER PLANT | 665052 | | .0 | 35 | 450 | 485 |
| TEMPLE, TX | BED REPLACEMENT BUILDING | 674064 | | 35.0 | 2,829 | 8,217 | 11,046 |
| TUSKEGEE, AL | 120 BED NURSING HOME CARE | 680090 | | 3.0 | 189 | 12 | 201 |
| WILMINGTON, DE | OUTPATIENT CLINIC ADDITION (OVERVIEW) | 460024 | | .0 | 59 | 26 | 85 |
| | | | sum | 354.9 | 34,632 | 235,223 | 269,855 |
| ASHEVILLE, NC | AMBULATORY CARE EXPANSION | 637096 | MINOR | 3.0 | 326 | 298 | 622 |
| AUGUSTA, GA | RENOVATE AMBULATORY CARE | 509156 | | .0 | 462 | 244 | 706 |
| BATAVIA, NY | WARD B CONVERSION (DOMINO - PHASE II) | 513041 | | .0 | 22 | 37 | 59 |
| BATAVIA, NY | WARD A BED CONVERSION DOMINO PH 3 | 513042 | | .0 | 17 | 217 | 234 |
| BEDFORD, MA | AMBULATORY CARE IMPROVEMENT | 518170 | | .0 | | 470 | 470 |
| BEDFORD, MA | NHCU WARDS 4A, 4C | 518173 | | .0 | | 475 | 475 |
| BIG SPRING, TX | RENOVATE OUTPATIENT CLINIC(1ST CONTRACT) | 519026 | | 1.0 | 285 | 531 | 816 |
| BILOXI, MS | EXPAND AMBULATORY CARE | 520129 | | .0 | 129 | 708 | 837 |

2/02/96

FY 1997
DETAIL PRINTOUT BY PROGRAM
(dollars in thousands)

| acility | Title | ACTNIS | Program | FTE | TOTAL RECURRING $ | TOTAL NON-RECURRING $ | TOTAL $ |
|---|---|---|---|---|---|---|---|
| OISE, ID | OUTPATIENT EXPANSION | 531094 | MINOR | 6.0 | 340 | 493 | 833 |
| UFFALO, NY | EXPAND OPC | 528501 | | .0 | | 1,017 | 1,017 |
| HICAGO(WS), IL | RENOVATE G.I./ENDOSCOPY SUITE | 537058 | | .0 | 10 | 563 | 573 |
| HILLICOTHE, OH | AMBULATORY CARE ADDITION | 538109 | | .0 | 155 | 1,356 | 1,511 |
| LARKSBURG, WV | RENOVATE 6TH FLOOR 30 BED NHCU | 540030 | | 29.0 | 1,816 | | 1,816 |
| OLUMBIA, SC | RADIATION THERAPY SITE PREP.' | 544304 | | 9.0 | 1,079 | 2,344 | 3,423 |
| ORT LYON, CO | RENOVATE OUTPATIENT CLINIC | 567137 | | .0 | 6 | 1,475 | 1,481 |
| T. WAYNE, IN | EXPAND OUTPATIENT AMB CARE | 569060 | | 3.0 | 1,057 | 1,322 | 2,379 |
| AINESVILLE, FL | RENOVATE WARD 2-D FOR MICU | 573060 | | .0 | | 1,190 | 1,190 |
| OUSTON, TX | AMBULATORY CARE SURGERY MUSO | 580064 | | .0 | | 35 | 35 |
| RON MOUNTAIN, MI | AMBULATORY CARE ADDITION | 585027 | | 8.0 | 1,020 | 494 | 1,514 |
| EBANON, PA | CONSTRUCT AMBULATORY CLINIC | 595060 | | 15.0 | 786 | 379 | 1,165 |
| EBANON, PA | NURSING HOME (CONV) BLDG 17 | 595082 | | .0 | 53 | 154 | 207 |
| OUISVILLE, KY | EXPAND AMBULATORY CARE | 603075 | | .0 | 170 | 1,048 | 1,218 |
| ILES CITY, MT | RENOVATE NHCU | 617043 | | 4.0 | 252 | 503 | 755 |
| ASHVILLE, TN | WARD UPGRADE PH 1 PRIVACY | 626078 | | .0 | | 35 | 35 |
| RESCOTT, AZ | EXPAND PRIMARY CARE/LAB | 649114 | | 2.0 | 503 | 318 | 821 |
| RESCOTT, AZ | RENOVATE DIETETIC KITCHEN | 649121 | | .5 | 64 | 224 | 288 |
| ENO, NV | AMBULATORY CARE FACILITY | 654063 | | .0 | | 643 | 643 |
| OSEBURG, OR | EXPAND AMBULATORY CARE | 653301 | | 2.0 | 200 | 840 | 1,040 |
| ALT LAKE CITY, UT | PATIENT PRIVACY 3A-GRD, B3 | 660117 | | .0 | 30 | 194 | 224 |
| AN ANTONIO, TX | EXPAND/IMPROVE O.R. SUITE | 671051 | | .0 | 2,340 | 2,966 | 5,306 |
| HREVEPORT, LA | RENOVATE PSYCH 9TH AND 10TH FLOORS | 667051 | | .0 | 222 | 384 | 606 |
| T. CLOUD, MN | AMBULATORY CARE EXPANSION | 656124 | | .0 | 51 | 462 | 513 |
| OPEKA, KS | AMBULATORY CARE IMPROVEMENTS | 677116 | | .0 | 27 | 611 | 638 |
| . LOS ANGELES, CA | B-500 REL PSYCH SERVICE 2ND FLOOR | 691203 | | .0 | | 413 | 413 |
| | | | SUM | 80.5 | 11,420 | 22,443 | 33,863 |
| ARIOUS | FY 97 MINOR MIS ACTIVATE FY 97 | 9997MS | MINOR MIS | 75.0 | 4,980 | 11,274 | 16,254 |
| | | | SUM | 75.0 | 4,980 | 11,274 | 16,254 |
| ARIOUS | FY 97 MR M & R ACTIVATE FY 97 | 9997RM | MRM | 45.0 | 2,988 | 24,890 | 27,878 |
| | | | SUM | 45.0 | 2,988 | 24,890 | 27,878 |
| AY PINES, FL | FT.MYERS, FL SOPC | 516LE2 | SOPC | 47.0 | 3,785 | 3,504 | 7,289 |
| AS VEGAS, NV | IOPC - REPLACMENT | 758LES | | 28.0 | 1,742 | 12,033 | 13,775 |
| CSC, CA | SOPC - SACRAMENTO | 612LE2 | | 27.6 | 2,527 | 8,616 | 11,143 |
| | | | SUM | 102.6 | 8,054 | 24,153 | 32,207 |
| UM | | | | 658.0 | 62,074 | 317,983 | 380,057 |

## CLAIMS BACKLOG

*Question.* According to VA's budget submission, the number of days to process a claim in fiscal year 1997 would still be below VA's own standard of 106 days, and far below the number of days a veteran expects a claim to be completed in—which is 68 days, according to surveys of veterans. When will VA meet its own standard—or better yet the veterans' standard of 68 days?

Answer. VA is making excellent progress in meeting our goal for the average number of days to complete an original compensation claim. In 1994, it required an average of 213 days to complete a claim. In 1995, we improved this figure by 52 days, bringing the figure down to 161 days. We estimate continued progress in 1996 and are on course for meeting our benchmark of 151 days. We currently estimate the 1997 figure to be 117 days and to achieve our goal of 106 days by 1998.

Many of the improvements we expect to experience in 1998 will be the result of the Business Process Reengineering (BPR). In the interim, we consider 106 to be the minimum number of days required under current processing systems. As BPR progresses, analyzing and improving our system, we will be able to reevaluate our goal. BPR, through the use of models, should assist us in determining how claims processing can be improved and what the optimum timeliness could be. Once this is established, we will strive to achieve this new goal.

As stated, veteran expectation is 68 days. We do not have evidence currently that this is achievable. However, through BPR, we will determine what is achievable and continue to work to provide the most timely and accurate claims processing possible.

*Question.* When will VBA provide its strategic plan?

Answer. Veterans Benefits Administration (VBA) is in the process of compiling its strategic plan for the outyears. A team of individuals is assessing and analyzing the initiatives submitted by the five business lines (Compensation and Pension, Education, Loan Guaranty, Vocational Rehabilitation and Counseling, Insurance), the four Areas (Central, Eastern, Western, Southern) and the support offices (Chief Information Officer, Chief Financial Officer, Training, Executive Management and Communication, Human Resources). Their goal is to ensure linkage and integration of all initiatives, in support of VBA goals, values and measures. VBA's Business Line Plan is a result of the strategic planning process. While planning is an evolutionary process, a "final" Business Line Plan is scheduled to be presented to VBA's Strategic Management Committee (formerly known as the Policy Board) with subsequent approval by the Under Secretary for Benefits. The result will be the basis for our fiscal year 1998 President's budget submission.

*Question.* For the first half of fiscal year 1996, BVA allowed 20.5 percent of the cases it reviewed and remanded another 41.8 percent. This means that nearly two-thirds of all cases reviewed had errors or defects requiring reversal or remand. In fiscal year 1995, the percentage of cases that involved more than one remand was 13 percent. Obviously, it costs more to adjudicate a claim when multiple decisions, rather than a single decision, are required. Also, this extra load accounts for backlogs and consequent protracted delays in the appeals process. What is VA doing to improve quality and accuracy in regional office decisions, to make decision-making more cost-effective and reduce backlogs and processing times?

Answer. I would like to correct the misconception that BVA allowances and remands are always errors or defects.

A large number of remands are based on judgmental differences rather than error. Chief among these are the remands for more adequate examinations. "Adequacy" of a medical examination is clearly a judgment call and should be characterized as an error only in the most egregious cases.

Case law which overturns long-standing VA policies or procedures and which is developed during the pendency of an appeal oftentimes results in unavoidable remand. The original VA decisions were correct at the time they were made. This also should not be classified as an error.

Compensation and Pension Service has many initiatives underway to improve claims processing. Rating Board Automation (RBA), for example, has improved service to claimants by providing clearer, more comprehensive rating decisions and notification. Claims Processing System (CPS) will provide automated assistance during the evidence development stage of claims processing. Information entered by adjudication personnel and data supplied through linkage with other computer systems will be processed through an automated "rule" database to help determine what additional evidence is needed to perfect the claim. Continued enhancements to C&P training will also contribute to improved quality and accuracy.

## ADP MODERNIZATION

*Question.* GAO, GSA and others have been extremely critical of VBA's computer modernization strategy, particularly the fact that VBA spent millions of dollars on hardware and software before determining what its business processes should be. It still hasn't figured out what its business processes should be. Since fiscal year 1986, $300 million has been spent on "modernization." What quantifiable improvements have been made as a result of this investment?

Answer. The stage one modernization deployment of personal computers, local area computer networks, and computer applications to support claims processing in VBA's 57 regional offices has resulted in significant improvement in VBA's delivery of benefits and services. This, coupled with the development of new business practices and specialized technologies, has contributed toward providing a modern RO environment to better serve America's veterans and their families.

Demonstrating the effectiveness of the modernization effort to date, the average number of days to process an original disability compensation claim has been reduced from 212 days in May 1994 to 156 days in March 1996. For the same time period, original disability pension processing was reduced from 127 days to 92 days. Original death indemnity compensation was reduced from 111 days to 79 days and original dependency indemnity compensation from 66 to 49 days.

A number of factors including improved availability and speed of access to VBA's information systems provided by the stage one platform has contributed to the improvement. In addition, installation of the following applications also contributed to improved response times or other service improvements to veterans:

*Automated Medical Information Exchange (AMIE).*—The replacement of outdated equipment has reduced the response time for receiving veteran medical data from 26 minutes to 4 minutes.

*Rating Board Automation (RBA).*—The automation of the veteran disability rating process has improved service to veterans by promoting consistent, well-organized and well-documented rating decisions, from which data and narrative can be directly extracted for use in award notices, denial letters, and statements of the case. In addition, it has reduced response time and improved accuracy for claims requiring rating board action.

*Personal Computer Generated Letters (PCGL).*—The improvement of automated responses to veterans has eliminated the dictating of letters and manual collection of forms sent to veterans. Adjudicators can download data into letters and automatically generate necessary forms.

*Eligibility Verification Report (EVR).*—The annual verification of veteran/beneficiary income data has been improved by preprinting data on the questionnaire sent to respondents. Data can be reviewed and verified more quickly by veterans and bar-coded information can be processed more quickly.

*Construction and Valuation (C&V).*—The C&V system assists veterans purchasing homes by tracking and recording real estate appraisal information and generating certificates of reasonable value. It also permits vendors to receive an electronic assignment of VBA-certified real estate appraisers.

*Question.* GAO recommended VBA conduct an analysis of how it should reengineer critical work processes before continuing its modernization initiatives. What is the status of efforts to conduct business process reengineering, and why is the Department requesting modernization funds in fiscal year 1997—including funding for imaging hardware and software—prior to the completion of this business process reengineering initiative?

Answer. VBA has been conducting a formal business process reengineering (BPR) review of the compensation and pension (C&P) process since October 1995. The presentation of a business case is expected in June 1996. This business case will articulate the vision of a changed process. The expected cost benefits will be stated using the performance measures included in the fiscal year 1998 VBA business plan required by the Government Performance and Results Act (GPRA). The expansion of BPR to other programs will begin immediately following the preparation of the C&P business case.

VBA's 1997 budget request does not include additional funding for imaging hardware and software. Funding is requested, however, for VBA's other major modernization project, replacement of the BDN payment system. Completion of the BDN replacement is proceeding in concert with ongoing BPR efforts, and results generated by the latter will be fed into the payment system project. Furthermore, the results of the BPR C&P project will be used to validate the VETSNET development effort and, where necessary, make adjustments and refinements.

The need to proceed with development of a replacement payment system at this time is dictated by the lead time required to develop the system and the urgency of software modifications needed to accommodate the change of century. Enhanced functionality to support the changes to the claims processing system will be more easily implemented in the resulting open systems environment. Changes and modifications to the replacement system for the new process will be included in the requirements for the first enhancement of the new system.

### REGIONAL OFFICE RESTRUCTURING

*Question.* Last Fall, VBA proposed a restructuring of some of its regional offices, consolidating certain services in a number of locations. Please describe the purpose and status of this effort.

Answer. The most compelling aspect of VBA's restructuring themes is the belief that we must undertake some processing consolidations for both efficiency and economy, but, at the same time, we must not let direct public service to our veterans diminish in the process. When VBA first began to consider and plan our restructuring campaign, the operating divisions in all regional offices were looked at and ranked according to quality, productivity, timeliness, and cost effectiveness. These rankings were used to help determine how and where VBA could best consolidate functions in order to meet the main themes of VBA restructuring which are: To achieve efficient, economical processing of benefits through appropriate consolidation and/or specialization opportunities in all program areas, including compensation and pension, education, loan guaranty, insurance, and finance; to achieve a greater degree of personalized service by expanding accessibility to VA benefits and services; and, by reducing operating costs in the process.

Based on a recommendation from the Under Secretary for Benefits, the Secretary has withdrawn the compensation and pension initiatives from the 1997 budget request. This decision was based on input from VBA Directors as well as a briefing from the Systems Research and Application Corporation which is assisting VBA in reenginerring a business process for compensation and pension claims processing. The contractor is making progress in developing approaches that will streamline our operations, increase customer satisfaction and save costs. The withdrawal of the initiatives will allow our business process reengineering opportunities a chance to impact on operations and demonstrate success.

*Question.* Your budget documents indicate that VBA is continuing to develop the details of restructuring. In addition, the strategic plan is not completed. Why are you proposing to restructure BEFORE your strategic plan is complete—and BEFORE you've worked out the details of the restructuring plan. Isn't this putting the cart before the horse?

Answer. All restructuring initiatives will be pursued within the framework of the VBA strategic planning process.

VBA is compelled by the current budget environment to explore restructuring options that will allow us to accomplish our mission within the reduced levels of resources available to us. Our staffing has steadily declined in recent years. We have no expectation of increased resources to support our future operations. Organizational change is imperative if we are to continue to provide quality services to our veterans and their families.

*Question.* I understand that in Anchorage, the VA regional office is below the national average for compensation & pension examination timeliness, and that C&P claims increased in Anchorage 11 percent last year, while nationally VA experienced a 27 percent decline. On the face of it, it doesn't seem to make sense that VA proposes to move certain functions out of this office. How do you explain this?

Answer. The Anchorage Outpatient Clinic (OPC) provides examination support to the Anchorage adjudication activity in those cases where disability evaluations are necessary. Under the Memorandum of Understanding between VHA and VBA covering the timeliness and quality of examination reports, the completed examination reports are to be returned to the adjudication activity that requested them within 35 days of the requests. The following information reflects the timeliness (in days) of the Anchorage OPC performance compared to the nationwide performance (i.e., all VA medical facilities providing examination support to all adjudication activities) by month for fiscal year 1996. We see no basis for believing that the service the Anchorage OPC now provides to the regional office would change.

| | Anchorage | National |
|---|---|---|
| October 1995 | 21.8 | 32.0 |
| November | 21.5 | 32.7 |
| December | 30.3 | 31.2 |
| January 1996 | 23.7 | 33.7 |

| | Anchorage | National |
|---|---|---|
| February | 28.1 | 27.4 |
| March | 35.0 | 30.4 |
| April | 35.8 | 30.5 |

The two major categories of claims adjudication work are compensation for service-connected disabilities and pension, which is a needs based program in which both income and degree of disability are considered. Not all offices have the same ratio of compensation work to pension work. In fact, the Anchorage office is one where compensation claims are a greater share of the workload than pension-related claims.

It is also important to note that during fiscal year 1995 Anchorage sent 400 cases to other offices for claims processing assistance; in fiscal year 1996 through the end of March 1996, Anchorage sent 539 cases to other offices for claims processing assistance. Of the cases sent out in fiscal year 1996 so far, 266 were original compensation claims. In other words, of the 470 original compensation claims received in fiscal year 1996 in the Anchorage office, more than 56 percent were sent to other offices to be worked.

The Anchorage adjudication activity is one of the smallest in the Nation. As projected staffing constraints occur, it will become increasingly challenging for small offices to provide the full range of adjudication services for all types of claims.

Based on a recommendation from the Under Secretary for Benefits, the Secretary has withdrawn the compensation and pension initiatives from the 1997 budget request. This decision was based on input from VBA Directors as well as a briefing from the Systems Research and Application Corporation which is assisting VBA in reengineering a business process for compensation and pension claims processing. The contractor is making progress in developing approaches that will streamline our operations, increase customer satisfaction and save costs. The withdrawal of the initiatives will allow our business process reengineering opportunities a chance to impact on operations and demonstrate success.

*Question.* How does moving claims processors 3,000 miles away from their Alaska customers improve access and service to Alaska's veterans? Won't transferring records back and forth between Alaska and Reno or Phoenix create unreasonable delays and create additional opportunities for errors to be made?

Answer. Based on a recommendation from the Under Secretary for Benefits, the Secretary has withdrawn the compensation and pension initiatives from the 1997 budget request. This decision was based on input from VBA Directors as well as a briefing from the Systems Research and Application Corporation which is assisting VBA in reengineering a business process for compensation and pension claims processing. The contractor is making progress in developing approaches that will streamline our operations, increase customer satisfaction and save costs. The withdrawal of the initiatives will allow our business process reengineering opportunities a chance to impact on operations and demonstrate success.

The goal of the VBA's Business Process Reengineering program is to redesign core processes in such a way as to link strategic planning to technology enhancements in order to articulate, explicitly and quantitatively, how improved practices and systems will better serve customers and stakeholders.

*Question.* Senator D'Amato has raised important questions about why some services at the Manhattan regional office would be proposed for elimination when this particular office was recognized by the Vice President with a "golden hammer" award for its efficiency and excellence in service. How do you explain this?

Answer. While it is recognized that the New York Regional Office has made significant improvements in workload management over recent years, its compensation and pension processing functions rank last in overall performance of quality, productivity, and timeliness.

Every effort must be taken to pursue more timely and accurate processing of claims for veterans and significant resource savings for VBA.

Based on a recommendation from the Under Secretary for Benefits, the Secretary has withdrawn the compensation and pension initiatives from the 1997 budget request. This decision was based on input from VBA Directors as well as a briefing from the Systems Research and Application Corporation which is assisting VBA in reengineering a business process for compensation and pension claims processing. The contractor is making progress in developing approaches that will streamline our operations, increase customer satisfaction and save costs. The withdrawal of the initiatives will allow our business process reengineering opportunities a chance to impact on operations and demonstrate success.

## MAJOR CONSTRUCTION

*Question.* VA's budget includes $32 million for partial costs of proposed new $211 million hospital in California and $42.6 million for a proposed new $172 million hospital in Florida. New hospitals in these locations were denied by the Congress last year for a litany of reasons—a shrinking veteran population, declining budget resources, an already-overbedded VA hospital system, and the trend toward outpatient care, to name a few. Considering your budget proposal includes significant staff reductions in fiscal year 1997—and presumably in the outyears, given your outyear budget projections—how would VA be able to staff these new facilities once they're built? What specific cuts would be made in other locations? Isn't it true that the Department is unsure it will be able to "activate" in fiscal year 1997 all of the completed construction projects because of budget concerns?

Answer. Resources for national priorities, such as the hospitals in California and Florida, that require a significant level of support would require a specific allocation from whatever level of resources are made available to the system. No specific cuts would be made in other locations, but the level of resources available for distribution to the Networks would be reduced.

The fiscal year 1997 Medical Care request does not include "line item" requests for the activation of specific projects. As part of the VA's restructuring to VISN's, activation requirements will be a part of each Network's planning process. We believe most activation funding will be made by each Network as they decide whether or not to fund projects from their overall fiscal year 1997 budget allocation. Some projects, however, may receive funding based on corporate decisions made as VHA enters a transition period in moving towards a capitation-based resource allocation system for fiscal year 1998. VA management will review previously planned activations and determine any special resource needs on an individual basis. During this period, a Capitation Advisory Panel work group has been established to determine how this should be accomplished. Any resources that are provided in this manner will reduce the overall level of dollars that remain available for distribution to the Networks.

*Question.* How many outpatient projects—which are on the $1 billion backlog for ambulatory care projects—could be funded with the $75 million requested for these 2 projects?

Answer. Listed below are our three highest priority projects that could be funded with the $75 million.

—Brockton, MA, Ambulatory Care Addition/Renovations, $13 million;
—Dallas, TX, Mental Health Enhancements, $19.7 million;
—Shreveport, LA, Outpatient Improvements, $25.4 million.

However, we wish to reemphasize our and the President's continuing commitment to the Travis AFB (CA) and Brevard County (FL) projects, which are needed in order to provide reasonable access to VA health care for over 700,000 veterans.

*Question.* The GAO has recommended in the past a moratorium on major construction pending full implementation of the VISN reorganization. This reorganization only recently was implemented, and it may be some time before decisions are made as to facility or ward closures. Isn't ANY major construction premature at this point, until VA is sure the restructured VA medical system will need all these refurbished and enhanced facilities?

Answer. Placing a moratorium on major construction spending is neither appropriate nor recommended. Twenty-one of the twenty-two VISN's have now been activated, with the final one to be activated shortly. The fiscal year 1998 major construction submission is now being developed with full participation of all VISN Directors. Projects prior to 1998 have been or will be reviewed and revalidated to ensure that projects are still relevant and fully justified.

*Question.* I understand that the total inventory of VA's planned major and minor construction projects exceeds $7 billion. What is the long-range plan to address VA's infrastructure needs, and why does the Department no longer submit 5-year construction plans?

Answer. Considerable care will be exercised by VA in the selection of projects, recognizing the limited and constrained budgets that have been available and that can be anticipated in the future. VA will utilize the funding that is appropriated in the major, minor and leasing budgets to achieve the greatest positive impact for patient care. We will pursue a balanced program of facility maintenance, modernization and new construction to provide the best possible access to care and environmental quality. The Networks, established under the Under Secretary's *Vision for Change,* will formulate Network strategic plans that address access to care, utilization of existing facilities and constraint of health care costs. They will identify the highest priority maintenance, renovation, and modernization initiatives, and will influence the methods VA uses to plan, develop, and select projects for budget submission.

Network Directors, established as part of the Under Secretary's *Vision for Change,* will play a key role in the formulation of VA construction plans. They will develop Network strategic plans that address health care costs, access to care, patient care, environmental quality, infrastructure utilization and facilities maintenance, renovation, modernization and expansion. The appointments to fill these positions were made at the time the plan would normally been developed. The Network Offices were yet to become operational and the former Regional Director's offices were being closed. The preparation of the plan was delayed in order that the Networks could become established and play a more meaningful role in the preparation of the next submission.

### POPLAR BLUFF

*Question.* I understand VA's recent announcement to close inpatient surgical procedures at Poplar Bluff is coming as a result of the VISN reorganization. How will the veterans of southeastern and south central Missouri continue to receive inpatient surgical services?

Answer. The closure of the inpatient surgical program at VAMC Poplar Bluff was based on quality of care concerns. Veterans in southeastern and south central Missouri will be provided inpatient surgical services at the St. Louis, Missouri, Marion, Illinois and Memphis, Tennessee VA Medical Centers. Emergency surgical services will be provided in the Poplar Bluff community at VA expense. The Network expects to begin outpatient surgical services at VAMC Poplar Bluff by using surgical staff from the St. Louis VA Medical Center in the near future.

*Question.* I understand a team of surgeons will be performing a review to make recommendations on how surgical services will be performed. When will that review be complete?

Answer. The review has been completed and a copy of the report is attached.

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*May 20, 1996.*

To: Pat Crosetti, VISN 15 CEO.
From: Vincent L. Alvarez, MD, Network Chief of Staff.
Subject: Recommendations of surgical task force.

1. The Special Surgery Task Force has met, and provided initial recommendations concerning Surgery at the Poplar Bluff VAMC.

2. The specific recommendations are as follows:

   a. Surgery Service at Poplar Bluff should remain closed, with Surgical Services provided by Surgeons from Marion (IL) VAMC, and St. Louis VAMC.

   b. Urgent and routine Surgical patients should be referred to St. Louis or Marion using referral mechanisms which are already in place.

   c. Patients needing emergency surgery should be treated at one of the two private hospitals in Poplar Bluff.

   d. Marion VAMC surgeons will begin holding general surgery clinics immediately.

   e. Certain specified surgical procedures are allowed, as listed on the attached list. This list will be expanded in the future.

   f. Dr. Baue will continue discussions and planning for expanded services in the near future: Subspecialty Surgery Clinics held by Subspecialty Surgeons from St. Louis, and more outpatient surgical procedures.

   g. Dr. Baue will immediately begin discussions with the Memphis VAMC, to discuss their involvement in providing Surgical Services.

   h. If at all possible, we recommend that the current staff be detailed to other VA Medical Centers as soon as possible.

   i. The IRM service at Marion should immediately begin working with the IRM service at Poplar Bluff, in order to provide the same access to Marion's and St. Louis' DHCP that currently exists between Marion and St. Louis.

3. The future focus of the Task Force will be the following:

   a. A product line of capability will be developed for Poplar Bluff, Marion, and St. Louis.

   b. The concept of satellite clinics geographically located between Marion, St. Louis, and Poplar Bluff will be explored.

   c. Dr. Baue will visit the Columbia VAMC to seek to develop collaborative arrangements with them.

d. The Task Force will develop appropriate guidelines regarding recommended evaluations of patients referred to Marion or St. Louis, in order to reduce duplication, and improve patient care.

### POPLAR BLUFF TEMPORARY LIST OF "SURGICAL PROCEDURES" ALLOWED FOR INDIVIDUALS PROPERLY CREDENTIALED TO PERFORM THESE PROCEDURES

Needle biopsy—Bone marrow, kidney, liver, pleura, lung
Cast application
Closed reduction (simple)
Cauterization
Chest tube insertion
Incision and drainage
Removal of warts, moles and skin lesions
Joint aspiration
Insertion of central line
Pacemaker insertion
Hyperalimentation
Thoracentesis
Paracentesis
Laceration suture
Injection of joint/bursa
Tracheostomy (only in emergency)
Peg placement
Esophagoscopy, biopsy and cytology
Colonoscopy
Sigmoidoscopy, biopsy
Gastroscopy
Proctoscopy
Esophageal tamponade
Pericardiocentesis (emergency only)
Phlebography
Spinal tap
Swanz Ganz catheterization

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*May 20, 1996.*

To: James Roseborough, Director, Poplar Bluff VAMC.
From: Pat Crosetti, MBA, MPA, VISN 15 CEO.
Subject: Surgical Service.

1. I have received and approved the initial report of the Special Surgical Task Force which I formed to evaluate and make recommendations about the Surgical Service at the Poplar Bluff VAMC. These are attached.

2. Please begin immediately to implement these recommendations, and develop a Staffing Adjustment plan, as detailed in VHA Directive 5111 and VHA Handbook 5111. As you will see, you should immediately involve the local union in deliberations.

3. Please complete this task by May 24, 1996.

*Question.* When do you expect to announce additional changes in other VA facilities as a result of the VISN reorganization—particularly those which are performing far fewer procedures than the standard number required to remain proficient?

Answer. The closure of the inpatient surgical program at VAMC Poplar Bluff was based solely on quality of care concerns. All Network Directors are reviewing clinical programs in their facilities. For example, the Heartland Veterans Health Network, which includes VAMC Poplar Bluff, is currently embarking on an initiative to link all the Network's clinical programs into a seamless network of care. A key component of this endeavor is to conduct a comprehensive inventory of patient care programs. Information from this review will be used in future decisions for potential program realignment. The realignment of clinical programs within the seamless environment will be focused on permitting the greatest access to primary care to veterans at their local facility. If, during the inventory, quality concerns develop, as they did at VAMC Poplar Bluff, similar expedient action will be taken.

With regard to our current thinking on the relationship of quality of care to numbers of procedures, please see the next response.

*Question.* Please provide a list of all facilities providing fewer than the standard number of procedures recommended to retain proficiency (1,200 procedures annually).

Answer. We are committed to ensuring that our surgical staffs are proficient and that we take steps to intervene whenever we believe that this is not true. Some studies have shown that for cardiac surgery, programs that do more than a certain volume (100 in VHA facilities) have less variability in their mortality/morbidity statistics than those which do less. Although some low volume programs had excellent statistics, it was shown that higher volume facilities were less likely to have excess complications and it was widely concluded that volume had a direct relationship to quality. A few years ago, we believed that the same finding would hold for other surgeries and proposed the base number (1,200 cases per year) as a minimum for all surgical programs. However, further study has not verified that volume is related to quality for other types of surgery and the Surgical Field Advisory Committee has recommended that the arbitrary number be eliminated and that programs be evaluated for quality through direct quality measures. (We now have instituted a program looking at surgical outcomes.)

Although we do not believe that it has meaning in terms of quality, almost all VA medical facilities (including Poplar Bluff) exceed the old quantity criterion—which counts both inpatient and outpatient surgery. We use a host of other, more direct measures of quality, and the local and network managers undertake immediate steps to intervene whenever quality problems appear to be suggested. The facts which precipitated closure of inpatient surgery at Poplar Bluff are chronic and on-going quality problems reflected in chart reviews, JCAHO findings, a disproportionately high number of tort claims, reports including a recent one from the Medical Inspector documenting quality concerns as well as a low volume of inpatient cases which raises questions about best use of limited resources. We believe that all VHA facilities which have surgical programs have suitably proficient staffs.

*Question.* Please provide a list of all facilities in the same category as Poplar Bluff ("Group 1") which provide inpatient surgical programs, and VA's plans for these programs under the VISN reorganization.

Answer. The following facilities are in Medical Center Group One and provide inpatient surgery:

*Facility.*—Cheyenne, WY; Fort Wayne, IN (now integrated with Marion, IN); Hot Springs, SD (now integrated with Fort Meade, SD); Iron Mountain, MI; Kerrville, TX (now integrated with San Antonio, TX); Marion, IL; Miles City, MT; and Saginaw, MI.

The Networks Directors are assessing their clinical programs to develop comprehensive strategies and plans for each Network. Plans for individual surgical services must await the completion of these assessments.

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## QUESTIONS SUBMITTED BY SENATOR TED STEVENS

### RESTRUCTURING PROPOSAL

*Question.* On page 4 of the Restructuring Proposal, the Task Force pledged that any proposal would provide "a greater degree of personalized service by expanding accessibility to VA benefits and service". How will moving compensation and pension processing and adjudication out of Alaska—thousands of miles away to Reno and Phoenix expand accessibility—especially in light of the fact that the VA currently experiences a telephone blockage rate of over 50 percent and even under the proposal this would improve by only 10 percent and that the VA phone lines shut down at 3 p.m. Alaska time?

Answer. There are two VBA restructuring themes included in this question. The first is the achievement of efficient and economical claims processing through consolidation of processing functions. The other theme encourages a greater degree of personalized service by expanding accessibility.

Based on a recommendation from the Under Secretary for Benefits, the Secretary has withdrawn the compensation and pension initiatives from the 1997 budget request. This decision was based on input from VBA Directors as well as a briefing from the Systems Research and Application Corporation which is assisting VBA in reengineering a business process for compensation and pension claims processing. The contractor is making progress in developing approaches that will streamline our operations, increase customer satisfaction and save costs. The withdrawal of the initiatives will allow our business process reengineering opportunities a chance to impact on operations and demonstrate success.

### NON-EXPANSION OF RENO

*Question.* On page 21 of the Data Matrix the Task Force grouped the VA offices into categories indicating whether they should be expanded or not expanded. Why was Reno specifically recommended not to be expanded when that is where Alaskan veterans' files are proposed to be mailed? Why were Alaska and Hawaii not considered for expansion, as is reflected on page 21?

Answer. In the course of preparing for restructuring, VBA service directors were asked to rank the operating divisions in all VBA regional offices. The listing on page 21 that you referenced is the ranking of the Veterans Service Divisions, a VBA public contact function. This listing is not relevant to the VBA restructuring initiative concerning the transfer of Compensation and Pension processing functions to Reno. Please review the various sub-set rankings of the Compensation and Pension Service on pages 12 through 17, and especially the overall rankings on page 11. In that ranking, which addresses the overall performance of Adjudication Divisions, Reno ranks 25th and Anchorage and Honolulu rank 51st and 52nd, respectively. In the ranking of performance only (page 13), Reno ranks 15th while Anchorage and Honolulu rank 48th and 51st, respectively.

Based on a recommendation from the Under Secretary for Benefits, the Secretary has withdrawn the compensation and pension initiatives from the 1997 budget request. This decision was based on input from VBA Directors as well as a briefing from the Systems Research and Application Corporation which is assisting VBA in reengineering a business process for compensation and pension claims processing. The contractor is making progress in developing approaches that will streamline our operations, increase customer satisfaction and save costs. The withdrawal of the initiatives will allow our business process reengineering opportunities a chance to impact on operations and demonstrate success.

### ALASKA'S COMPENSATION AND PENSION PROGRAM

*Question.* Last month, Dr. Kizer traveled to Alaska with me. At the start of the trip the Alaska VA briefed us on the operation of the center. Dr. Kizer asked several questions about the center's productivity and the VA staff provided statistical analysis of the productivity of the center since it opened a few years ago. The Anchorage facility has risen from one of the least productive operations in the country to one of the best. The VA proposal would penalize the Alaska facility because its productivity was down during the first few years of its operation.

Were the recent improvements in productivity taken into consideration when the VA decided to eliminate Compensation & Pension from Alaska?

Answer. All recent improvements in productivity have been considered but VBA has experienced a general increase in productivity throughout the system.

*Question.* Was consideration given to the fact that COLA is paid in Hawaii and in Alaska? Is the total compensation—salaries plus COLA—used in any way to determine productivity?

Answer. While costs of operations, including COLA's and Premium Pay, are a factor in restructuring considerations, they are not included in any productivity measure.

Productivity is computed by comparing the percentage of National output compared to the percentage of National staffing in a particular element. Salaries are not included in productivity determinations.

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## QUESTIONS SUBMITTED BY SENATOR PATRICK J. LEAHY

### BUDGET CUTS AT WHITE RIVER

*Question.* Mr. Secretary, or Dr. Garthwaite, I have been following with interest recent developments at our veterans hospital in White River Junction, Vermont. I know you know where it is Mr. Secretary, because you took the time to go up there last year and visit with Vermont veterans. I thank you for your interest, and I have to assume that this year you will not be returning to see us because of the limits that this Congress has placed on your travel. I'm sorry you won't have that opportunity.

Now that the VA hospitals have been reorganized into regional VISN's, I am hearing from veterans who will soon have to travel to Boston or Albany for radiation therapy.

Many of these veterans are elderly and disabled, and a drive from Burlington to Boston takes about 4 and a half hours in good weather. Now I can see that for certain specialties like neurosurgery that you might have to send veterans to different hospitals, but I am concerned that what we are seeing here is the beginning of a shift of services away from the rural hospitals to the urban ones. Where exactly do states like Vermont fit into your vision of national VA health care? Can you reassure me that no more services will be taken away from White River without consulting with me first?

Answer. For many years rural VA facilities such as VAM&ROC White River Junction have offered tertiary medical care not available locally through transferring the veteran's care to urban VAMC's such as those located in Boston, West Roxbury or Albany.

In 1987, White River Junction entered into a major joint radiation therapy equipment purchase agreement with its academic affiliate, the Dartmouth Hitchcock Medical Center (DHMC). Under the terms of the agreement, the equipment would be located at the DHMC and, up to certain thresholds, radiation therapy would be provided to veterans locally at the DHMC at no cost to the veteran. The service fees were offset by monthly payments to the VA by the DHMC for the equipment which was amortized over a ten year period. Beginning in fiscal year 1997, only "emergent" cases will be referred to DHMC for radiation therapy with all non-emergent cases being referred to VAMC's such as Boston or Albany.

VISN 1, the VA New England Healthcare System, is committed to providing quality cost efficient healthcare. There are numerous initiatives, feasibility studies and venture capital proposals underway within the VISN designed to streamline operations and contain costs. Temporary lodging facilities for veterans and their family members are under consideration at White River Junction and other New England VA facilities to ease the burden of the veterans, particularly the elderly, who must travel long distances to receive radiation therapy and other types of care. In the case of Boston and Albany, both facilities already have such facilities available.

We will certainly keep your office informed of any significant program/activity changes at White River Junction.

*Question.* I understand that you have to streamline and reinvent the VA in these tough budget times, but I tell you, you need to make sure that your headquarters and administration are cut to the bone before you start degrading the services that our veterans deserve.

Answer. Based on the recommendations of a task force, MAMOE was sized to provide administrative support to ensure quality patient care. In early fiscal year 1996, a Reduction-in-Force (RIF) was conducted to achieve the recommended level. MAMOE staffing levels will be constantly reviewed to ensure that adequate staffing levels exist and, as functions change, a corresponding adjustment will be made to staffing levels.

### CAT SCAN

*Question.* I have another parochial issue that I hope you can help me with, Dr. Garthwaite. In recent years, White River has been trying to replace their CAT Scanner with a more advanced model. You surely know doctor, how much technology has improved these remarkable machines in recent years. It is my understanding that the White River CAT Scan has exceeded its useful life by five years, and is listed on the VA equipment list as being in "urgent" need of replacement. Dr. Garthwaite, can I have your assurance that you will review the VA's equipment list with respect to the White River CAT Scan?

Answer. A $1.2 million replacement CAT Scanner (plus associated construction cost of $100,000) for VAM&ROC White River Junction is currently being considered at the VISN in Boston. It is my understanding that the White River Junction scanner is a high priority item, and I am sure it will be given appropriate consideration by the Network Director.

### PTSD CENTER

*Question.* Gentleman, the horrors of war have always exacted a terrible toll on men's minds as well as their bodies. In World War I they called it "shell-shock." In World War II they called it "battle fatigue." And after Vietnam they gave it the clinical name "Post-Traumatic Stress Disorder," or PTSD. Whatever its name, the result is the same: severe, often debilitating mental problems after exposure to violent or traumatic acts. We know so much more about PTSD than we did 20 or 30 years ago. We know about it largely because of the important research of the VA's National Center for PTSD, and because of the excellent work done case by painful case at Veterans Centers across the nation.

We also know that PTSD is not limited to veterans. PTSD strikes people who are the victims of natural disasters, of bombings, of transportation accidents, even of criminal acts of violence. The recent Oklahoma City bombing showed that there are serious deficiencies in coordinating delivery of mental health services. With the VA's resident expertise, do you think that the VA's National PTSD Center, working in conjunction with other agencies like FEMA, could become a clearinghouse of information and training in post-disaster mental health?

Answer. Emphatically, yes. Part of the National Center for PTSD's congressional mandate is to promote knowledge about PTSD throughout VA and to other care providers, in the public and private sectors. The National Center has been involved in post disaster issues from the time of the Loma Prieta earthquake, and in virtually every major disaster in which VA has provided support since then. In conjunction with General Joe Gray, Director of VA's Emergency Medical Preparedness Office (EMPO), Fred Gusman and Bruce Young of the National Center Education & Clinical Laboratory Division were deployed to Oklahoma City as consultants to FEMA to develop long term (6–12 month) mental health response in April 1995, immediately after the bombing. They returned in June and September to provide training and consultation to local professionals.

In terms of the "clearinghouse" function, the National Center's PILOTS computerized bibliographic database now has 10,000 citations from the world's PTSD literature, including works on the traumatic stress aspects of disasters. The National

Center now has a World Wide Web Home Page to facilitate access on the Internet to a variety of National Center publications and information sources.

With regard to education, staff of the National Center Education and Executive Divisions developed a curriculum for training clinicians and administrators in disaster mental health services. Mr. Young, and Drs. Ford and Ruzek of the National Center served as trainers in the May 1995 Federal Disaster Exercise "Response '95", working intensively with two statewide VA mental health disaster response teams (from Alabama and Mississippi) and an Air Force Reserve critical incident stress team. The Disaster Mental Health Training and Evaluation curriculum will be disseminated through the Interagency Disaster Crisis Counseling Task Force this fiscal year. (The Interagency Disaster Crisis Counseling Task Force has members from VA's Mental Health Strategic Healthcare Group, Readjustment Counseling Service and EMPO as well as representatives from DOD, HHS and the American Red Cross). National Center staff have participated in planning for development and training of facility and VISN-based mental health disaster relief stress management teams.

In summary, VA's National Center stands ready to enter into any collaborative efforts that will enhance our nation's preparedness for management of mental health aspects of disasters on the local, regional or national levels.

## QUESTIONS SUBMITTED BY SENATOR J. ROBERT KERREY

### VETERANS INTEGRATED SERVICE NETWORK

*Question.* As you move to implement the new VISN system, what steps are you taking to ensure continued accessibility to VA services for rural veterans in states like Nebraska?

Answer. Network and VA hospital directors have local authority to establish outreach clinics, contract for outpatient care or purchase mobile clinics as required to serve the health care needs of eligible rural veterans. In Nebraska, several initiatives have been implemented to increase accessibility to VA care in rural areas. These represent a strategic priority in this network due to patient demographics and the geography of the service area. Examples of steps taken include the following: established VA primary care clinic in North Platte (project 8,000 visits annually); conducted focused health screening programs for diabetes and hypertension (these are typically conducted on an outreach basis in rural communities by VAMC staff); implemented a network-wide, medical center based 24-hour telephone triage service; expanded certain clinic services to include weekend and evening coverage (these include specialty medical clinics and alcohol treatment services); and made available on evenings and weekends Compensation and Pension (C&P) examinations.

### GRANTS FOR CONSTRUCTION OF STATE EXTENDED CARE FACILITIES

*Question.* Recognizing the VA's budgetary constraints, why has there been a decrease in the President's budget request for Grants for Construction of State Extended Care Facilities? This is a program that partners state and federal construction dollars, and provides care at a reduced cost to the federal government.

Answer. This program, like most Federal programs, has been impacted by the availability of scarce discretionary funding. VHA is committed to providing and/or arranging for a coordinated continuum of care recognizing the health status and care needs of the long-term care population, and include programs that are institutional and non-institutional, VA and non-VA.

### PER DIEM RATE FOR STATE EXTENDED STATE VETERANS HOME PROGRAM

*Question.* Could you also address the issue of the per diem rate for the State Veterans Home program? Will your budget request provide adequate funding to continue to meet the needs of this program?

Answer. The projected fiscal year 1996 per diem rates are as follows: nursing home care—$37.56, hospital care—$37.56, and domiciliary care—$15.33. The projected fiscal year 1997 per diem rates are as follows: nursing home care—$39.74, hospital care—$39.74, and domiciliary care—$16.13. The budget includes funding levels for the three state home programs in medical care of $207,957,000 and $232,209,000 respectively for fiscal year 1996 and fiscal year 1997. These estimates are based on anticipated patient census for existing state homes and new beds activated by the States during this timeframe.

### VETERANS CONSORTIUM PRO BONO PROGRAM

*Question.* This year's budget request does not include funding for Veterans Consortium Pro Bono Program. Do you plan on providing funding for this program through the Court of Veterans Appeals?

Answer. This program is not funded nor run by the Department of Veterans Affairs.

### VA REGIONAL OFFICES

*Question.* Could you give me an update on your efforts to realign the VA Regional Offices?

Answer. Based on a recommendation from the Under Secretary for Benefits, the Secretary has withdrawn the compensation and pension initiatives from the 1997 budget request. This decision was based on input from VBA Directors as well as a briefing from the Systems Research and Application Corporation which is assisting VBA in reengineering a business process for compensation and pension claims processing. The contractor is making progress in developing approaches that will streamline our operations, increase customer satisfaction and save costs. The withdrawal of the initiatives will allow our business process reengineering opportunities a chance to impact on operations and demonstrate success.

### SUBCOMMITTEE RECESS

Senator BOND. Thank you, Mr. Secretary, and your colleagues. This hearing is recessed.

[Whereupon, at 11:20 a.m., Friday, May 3, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

# DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT AND INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1997

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THURSDAY, MAY 16, 1996

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
*Washington, DC.*

The subcommittee met at 2:20 p.m., in room SD–192, Dirksen Senate Office Building, Hon. Christopher S. Bond (chairman) presiding.

Present: Senators Bond, Burns, Shelby, Bennett, Campbell, and Mikulski.

## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

### STATEMENT OF DANIEL S. GOLDIN, ADMINISTRATOR

**ACCOMPANIED BY:**
- **DR. FRANCE A. CORDOVA, CHIEF SCIENTIST**
- **ARNOLD G. HOLZ, CHIEF FINANCIAL OFFICER**
- **MALCOLM L. PETERSON, COMPTROLLER**
- **MICHAEL D. CHRISTENSEN, ASSOCIATE ADMINISTRATOR FOR HEADQUARTERS OPERATIONS**
- **JOHN D. SCHUMACHER, ASSOCIATE ADMINISTRATOR FOR EXTERNAL RELATIONS**
- **JEFF LAWRENCE, ASSOCIATE ADMINISTRATOR FOR LEGISLATIVE AFFAIRS**
- **WILBUR C. TRAFTON, ASSOCIATE ADMINISTRATOR FOR SPACE FLIGHT**
- **ROBERT E. WHITEHEAD, ASSOCIATE ADMINISTRATOR FOR AERONAUTICS**
- **DR. WESLEY T. HUNTRESS, JR., ASSOCIATE ADMINISTRATOR OFFICE OF SPACE SCIENCE**
- **DR. ARNAULD E. NICOGOSSIAN, ACTING ASSOCIATE ADMINISTRATOR FOR LIFE AND MICROGRAVITY SCIENCES AND APPLICATIONS**
- **DR. JOHN E. MANSFIELD, ASSOCIATE ADMINISTRATOR FOR SPACE ACCESS AND TECHNOLOGY**
- **DR. CHARLES F. KENNEL, ASSOCIATE ADMINISTRATOR FOR MISSION TO PLANET EARTH**
- **ROBERTA L. GROSS, INSPECTOR GENERAL**

### OPENING STATEMENT OF CHRISTOPHER (KIT) BOND

Senator BOND. This hearing of the VA, HUD, and Independent Agencies Subcommittee will come to order. It is my pleasure to welcome Dan Goldin to this hearing on the President's request for the National Aeronautics and Space Administration for fiscal year 1997. I apologize to my ranking member. I normally wait until she has arrived, but apparently she has been delayed, and I may have to leave to offer an amendment.

Senator Bennett can sit in for me for a while, but this may be musical chairs. Faces may change as you speak. Please try not to let it disturb you. Your full statements will be made a part of the record, and we all go home and read them very carefully anyhow, so it does not matter if we are not here at any particular point.

The NASA budget is an interesting one, in that funding for the agency grew rapidly during the last decade from about $4 billion to slightly over $14 billion by fiscal year 1992. Since then, of course, overall funding essentially has been frozen. The proposed budget for fiscal year 1997 extends the trend with a request of $13.8 billion.

No major starts or terminations are proposed. It is almost a boring budget, but that overlooks several serious issues which have arisen as the agency restructures to meet future program and management demands as well as budgetary challenges.

The shift to greater program control back to the centers and the resulting downsizing of the headquarters is one such issue that we are going to discuss today. It is my hope, however, that we will spend some time examining not just the pending budget but, rather, some of the major reductions proposed by the President for the next several fiscal years, reductions which, in my view, would have devastating consequences for ongoing NASA programs.

While it is customary to deal only 1 year at a time in the appropriations process, I think it would be shortsighted to ignore the major threats posed by these outyear budget cuts. Maintaining the development programs for NASA programs in fiscal year 1997 are readily accommodated within current levels, but we must be cognizant that the budget cuts proposed in the ensuring fiscal years may require the termination of these same programs in a year or two. While it is always difficult to predict future year budgetary constraints, we have to consider their possible impact on activities currently under review.

If we anticipate budgetary trends, which will soon force the termination of a number of these programs, and sadly, that seems to be the case, would it not be wiser and much more fiscally prudent to make those choices and decisions now?

On that somewhat somber note, I will now turn to my distinguished colleague, the Senator from Utah.

## STATEMENT OF ROBERT F. BENNETT

Senator BENNETT. Mr. Chairman, I have no real substantive opening statement, but I do want to take the occasion to thank Administrator Goldin for his support of Space Talk in Utah, which is an annual attempt on our part to try to rally public support for the space program.

I can report to you and to the committee that this last time Space Talk was not only its normal smashing success, but that Mr. Goldin allowed the shuttle, as it was being flown on its 747 platform from one end of the country to the other to stop in Salt Lake

City to refuel. The shuttle 747 flew over the Salt Lake Valley and on down to Provo, did a circle, came back up having covered from Ogden to Provo. Then landed just at sunset with picture perfect photographic conditions. A seven-column spread on the front page of the Salt Lake Tribune the next morning.

I still have people coming up to me on the street with tears in their eyes, shaking my hand and saying, thank you, Senator Bennett, for bringing the shuttle to Salt Lake. It is the most moving patriotic experience I have ever had in my life.

So there is a great reservoir of support for the space program out there that many times we seem to forget, and this was symbolized by the reaction to the shuttle. I had no idea that it would have that kind of an impact.

I will say, if I may, that one fellow on his way home was asked how was it, and he said, that damn Orrin Hatch created a traffic jam with 60,000 people and it took me an extra 2 hours to get home.

So Orrin got the credit for bringing the shuttle to Utah, which is fine, but the important thing is that there is a great deal of support for the space program, and I agree that the proposed budget target set by the President does not reflect that support in the body politic as a whole, but I wanted to thank the Administrator for his support for what we are trying to do, to give support to the space program.

Senator BOND. Well, that is interesting, Senator Bennett. How did you pull that off? Sounds like you had a wonderful media event.

Senator BENNETT. I had a few friends in high places, and that is very dangerous for me to say, because now you are all going to want one. [Laughter.]

Senator BOND. With that, Mr. Administrator, you have some introductions I believe you wish to make, and then if you would begin your statement.

## NASA STAFF INTRODUCTORY

Mr. GOLDIN. Before I make my statement, I would like to recognize two of NASA's outstanding leaders, Dr. France Cordova and Dr. Charles Kennel. Both of them have made amazing contributions to the Nation's space program and to America. They both came to us from academia. They came with the understanding they would be here 3 years and then go back to academia, and I think they have made their mark.

Dr. Cordova, as Chief Scientist of NASA, has revitalized the science activity at the agency and has caused the agency to communicate to the American people in plain English about what we are doing in science. She has brought together all the science disciplines at NASA, so now we speak with one voice. She is going to become vice chancellor for research at UC Santa Barbara.

Dr. Kennel will be the executive vice chancellor at UCLA. He headed up our Mission to Planet Earth Program, and under his direction we have been able to cut the budget, hold to all of our scientific measurements, and add significant new richness in both commercial activity, advanced technology, and to cut the outyear funding by 30 percent. He has done a wonderful job. I think these two great Americans need to be recognized, and it is my privilege to do that.

Senator BOND. We appreciate that very much, and extend our thanks both individually and on behalf of this committee and our colleagues in the Senate for that excellent work. We wish you well.

Mr. Goldin has said you are already taking volley ball lessons, and we hope that works out well for you. [Laughter.]

Senator BOND. Dan, if you want to proceed.

## STATEMENT OF DANIEL S. GOLDIN

Mr. GOLDIN. One more thing before I proceed, I would just like to respond to Senator Bennett. I want to tell you every time I see the shuttle land and take off I have tears in my eyes for the same reason, the patriotism I feel toward what this country has done. It is something shared by everybody.

Mr. Chairman, I want to start off today by saying how much NASA appreciates the support we receive from Congress. This committee has worked very closely with us. You have helped us make NASA more relevant, more efficient, and more effective. We are very grateful, and we have held up our end of the bargain.

In the last few years our budget plan has been cut by 36 percent. We have worked with this. We have not complained. We have rolled up our sleeves. We have raised productivity by 40 percent. We have made NASA more focused and more in touch with the country. I want to thank you for helping us make this happen. You gave us stability in fiscal year 1996 that was crucial for the agency.

Today, we are asking for that again in fiscal year 1997. That is the message I bring to you today. We need stability of our budget in 1997. The President's budget would give us stability at $13.8 billion. We greatly appreciate President Clinton's support, leadership, and commitment to a dynamic space and aeronautics program for America.

Let me tell you why stability is so important to NASA right now. First, this has been 1 year of tremendous change, as you have even noted in your opening remarks. We need time to catch our breath. We need time to absorb all the changes and continue with them in an orderly manner.

Second is the human impact. Additional cuts in 1997 will paralyze our employees. We have already absorbed big cuts. We have already downsized close to 4,000 employees at NASA, from 25,000 to about 21,000. We have already disrupted lives. Cut after cut after cut will further threaten morale. It will further disrupt our ability to get the job done in an orderly manner.

Third, when we have stable funding, when we can stick to schedule we have a better long-term cost performance. When we can do that, when we can do what we say we will, cost stays on track.

The GAO did a survey a few years ago. NASA programs averaged 77 percent cost growth. Today, we are underrunning program cost estimates from last year as we sum up all our major programs. We can do that because we got stable funding in 1996.

Fourth, NASA has worldwide commitments—International space station, mission to planet Earth, and space science. If we renege on our commitments NASA loses credibility and the U.S. Government loses credibility.

Nondefense research has been under siege. R&D is the life blood of America's future. NASA has a very crucial role to play in this.

We know that Congress has a Herculean task. This committee faces some very tough choices. Everybody in America wants the deficit to come down. You have got the difficult and thankless job of actually making it happen.

NASA has taken a hefty share of cuts. We have worked with them. We have used them to make NASA better. We are on the leading edge of Government reinvention. To follow through, we need stability. We need stable funding in 1997, and we can continue an orderly reorganization. We can continue to position ourselves to meet the science and technology challenges of the 21st century.

Concerning the out-years, events in recent weeks have caused me to be a bit more optimistic. In recent discussions with the administration and some Members of Congress, there is a strong interest in making sure NASA stays vibrant and maintains its core capabilities.

We have had good conversations on Capitol Hill. Discussions with you, Chairman Bond, and with Senator Mikulski have been very helpful. In the last few weeks, we have gotten more signals of support from members and the administration. We are confident that out-year problems will be resolved.

## PREPARED STATEMENT

I want to close by thanking the chairman and this distinguished committee. Your vision for a strong, relevant space and aeronautics program are transforming NASA and America. We want you to know that we continue to look for savings. We will continue to look for more efficiencies. We will continue to value your help and insight as we position NASA and America for the 21st century.

Thank you.

[The statement follows:]

## PREPARED STATEMENT OF DANIEL S. GOLDIN

Mr. Chairman and Members of the Subcommittee: I am pleased to be here today to present the President's fiscal year 1997 budget request for NASA of $13,804.2 million. NASA requested stable funding through fiscal year 1997, and that is what the President's budget gives us. This budget will enable us to continue to restructure NASA in an orderly, well-thought-out way, deliver a space and aeronautics program that is relevant, balanced and stable, and protect the human dignity of our employees and contractors.

Since 1993, NASA has reduced its out-year budget plan by 36 percent by rescoping programs, eliminating low-priority efforts, reducing support contracts, and conducting two employee buyouts—saving the American taxpayer nearly $40 billion. From an historical perspective, the reduction is even more dramatic—from 4.5 percent of the Federal budget during the Apollo years, NASA today is nine-tenths of one percent. The fiscal year 1996 budget request represented a reduction of almost $5 billion to the fiscal year 1995–2000 plan, including a specific challenge of $4 billion between fiscal year 1997 and fiscal year 2000. To meet this challenge, NASA undertook an intensive Zero Base Review, achieving the multi-year savings through sweeping management and organizational savings, while preserving our core programs.

We have not only kept our commitment to the Congress to constrain program cost growth. We can show, for program after program, that life cycle cost estimates are actually lower. The GAO conducted a survey a few years ago which showed NASA programs averaging 77 percent cost growth from their initial estimates. Today, we are underrunning our program cost estimates from last year. If you knew nothing else of the turnaround at NASA, the difference between those two figures should convince you that our resolve is real.

When I became Administrator for NASA in 1992, the Agency's budget profile called for $153 billion in spending over the fiscal year 1993–2000 period. We cancelled $13.5 billion worth of programs contained in that profile, so we would have spent $140 billion for the remaining programs. The programs we terminated were discontinued for a variety of reasons: their cost estimates were unrealistically low; their schedules to completion were unacceptably long; and/or their objectives were no longer relevant to NASA's mission. We have not cancelled any well-managed program which is contributing to NASA's core aeronautics and space goals. For the same fiscal year 1993–2000 period, our current profile is $110 billion—$99 billion for ongoing programs and over $11 billion for new programs! If one compares the $140 billion to the $99 billion for the ongoing programs, NASA's funding profile is $41 billion lower—a productivity increase of 40 percent on our ongoing programs! How did we do this? We stopped doing business in the old ways. We challenged our program managers and our contractors to do more with less, to do business in new ways. That $11 billion was used to start a remarkable number of new space and aeronautics programs—over 30—ranging from small spacecraft developments and the Discovery and Mars programs, to large programs like the High Speed Research and Advanced Subsonics technology programs.

NASA is indebted to this Committee for its support and its key role in ensuring stable funding for NASA's aeronautics and space efforts over the past several years. With this Committee's help, we have been able to sustain our core activities and maintain a balance among them. Recent enactment of a final fiscal year 1996 appropriation for NASA at a level of $13.885B is particularly gratifying. Favorable Congressional action on the NASA fiscal year 1997 budget request will provide the continued stable funding support that we are convinced is fundamental, not only to developing programs on schedule and within budget, but to position us to implement the sweeping institutional changes necessary over the next four years to meet the challenges of the Zero Base Review.

Next, I will address specific programs in each Enterprise area and describe not only status, but how each prospers under this new philosophy and within the fiscal year 1997 budget request.

## HUMAN EXPLORATION AND DEVELOPMENT OF SPACE

The International Space Station (ISS) program is proving itself to be a model of reinvention. The management approach has been restructured, processes have been streamlined, employees have been empowered and unprecedented decision making authority has been given to the contractor team. We have gained an unparalleled level of experience, and learned much in working with other nations toward a common purpose in Space. The first phase of the ISS program has proven itself to be sound and fruitful, providing technology demonstrations, risk mitigation, operational experience and early science opportunities. The next phases of the ISS are rapidly becoming a reality. The program has evolved and is dealing with a myriad of details: qualification and development testing on a major scale, completion of flight components, baselining of software releases and the reality of bringing all this activity together to ensure the timely delivery of components and modules. First Element Launch remains on schedule for November 1997 and the first crew will arrive on the Station in May 1998. The total funding for the program in fiscal year 1997 is $2,149.0 million. This includes funding for the development and operation of the International Space Station, the science payload facilities programs and the Mir flight program.

We will continue to achieve significant U.S./Russian cooperative milestones in fiscal year 1997 with the fifth, sixth, and seventh joint Shuttle-Mir flights. The primary objectives for these flights are to rendezvous and dock with the Mir, perform on-orbit logistics, conduct science and technology research, and provide crew exchange. Dr. Shannon Lucid has now joined the Mir crew after the successful docking of STS–76. With her, we begin a two-year period of continuous U.S. presence on Mir.

The Shuttle/Mir portion of the International Space Station program has already provided significant data on the effect of long-term space travel. The human body's reaction to microgravity compares in many ways with the effect of aging. The continued research that we are now able to perform on orbit will be applicable to understanding conditions affecting the elderly and bedridden here on Earth.

The International Space Station is intended to advance the ability of humans to safely and effectively live and work in space, with ever-increasing levels of productivity. The International Space Station will be an orbiting center of excellence where scientific research, technology development, and commercial applications come together for the benefit of humankind. The scientific research performed on-board will be cross-cutting in its scope, involving the life, microgravity, Earth, and space sciences. Advanced technology will be developed in the diverse areas of communications, instrument systems, spacecraft systems, and robotics and teleoperations. The result of these efforts will affect the lives of everyone on Earth through the production, in space and on Earth, of new products and services.

The International Space Station will provide unique, long-term access to microgravity and ultrahigh vacuum environments, which cannot be duplicated on Earth. Its design will allow for major increases in energy, crewtime, and volume, compared to earlier designs, which will enable the broad base of research that is planned to be performed. The unique environment allows research to be integrated across a spectrum of disciplines in the life sciences, to include studies of cells, plants, aquatic life, and the human body. Furthermore, its architecture is reconfigurable so that technology development is not constrained. This flexibility allows researchers to conduct "breadboard"-level experiments in an environment that simulates conditions on the ground. This well thought-out, flexible design and capability will allow the International Space Station to serve as a testbed for new technologies, in order to increase productivity in space.

The fiscal year 1997 funding request for the U.S./Russian cooperative program is $138.2 million. As the Committee is aware, NASA recently committed to assist the Russian Space Agency (RSA) in achieving its objective to extend the Mir program during the assembly phase of ISS, to the extent feasible. This requires that we take into consideration the joint interest in the Shuttle-Mir program, enhanced cooperation, and the U.S. objective of minimizing changes to the ISS. Over the last several months NASA has worked with our Russian colleagues to identify ways to reduce Russian ISS construction and operation costs so that Russia can continue to operate its Mir space station beyond the year 1997. NASA and RSA technical teams have developed a plan that is mutually beneficial, recognizing that there are still details to be worked out and that the resulting assembly sequence modifications must be reviewed and coordinated with our other international partners. Under this plan, we would add one flight to the Shuttle manifest and remanifest two additional flights, resulting in a total of nine Shuttle-Mir flights. This plan allows us to receive a larger return from our research investment in the Specktr and Priroda modules and helps the Russians overcome their logistics shortfall in 1998. We have emerged with a plan that maintains our commitments without impacting our $2.1 billion annual cap, a plan that we believe provides less risk to the ISS program.

As is by now well-known, it came to NASA's attention in February 1996 that Russian contractors on the ISS program had been facing difficulties maintaining the schedule for ISS components, in particular the Service Module, as a result of delayed funding from the Russian Government. We took these indications very seriously, and I expressed my concern directly to Yuri Koptev, the General Director of the Russian Space Agency. In addition, the Administration also expressed its concern to the Russian Government. You also expressed your concern, Mr. Chairman, in a letter co-signed with Chairman Sensenbrenner to the Russian Deputy Prime Minister dated March 8, 1996.

The Russian Space Agency informed us that, following the Gore-Chernomyrdin Commission meeting in January 1996, a comprehensive review of space funding was conducted in Russia. Results of that review are beginning to be expressed to us, as well as responses to our questions concerning the Service Module. Specifically, President Yeltsin announced that the Russian Government will move quickly to provide significant, critical funding for Russian companies working on the ISS program. President Yeltsin also states that a complete schedule of funding had been developed and will be followed by Russia's Finance Ministry. The Office of the Vice President has received indications from Russian Prime Minister Chernomyrdin that Russia will meet its commitments to the ISS in full. Also, on April 15, Mr. Koptev responded to my concerns in a letter in which he stated that the Russian Government has arranged for "expedient funding" for its contribution to the ISS program. Our next steps will be to continue to work to complete the intensive negotiations underway in order to complete the NASA/RSA Memorandum of Understanding in the coming weeks. To ensure our confidence in the Russian participation, we will work with the RSA to make sure we clearly understand the Russians' funding profile, and to agree on milestones which can be mutually validated.

From a management perspective, the International Space Station program has undergone some well-publicized scrutiny within the past few months, and there have been headlines reporting that the program is over cost and behind schedule. The NASA Independent Annual Review (IAR) Team and the General Accounting Office (GAO) cited the negative trends identified by the program's Performance Measurement System. This is data which Space Station managers use on a regular basis to identify areas which require special attention. Both the IAR Team and the GAO would confirm that the problems they identified are well known to program management. To accurately gauge and assess program performance, NASA has instituted a rigorous, program-wide Performance Measurement System. Using this system, cost and schedule baselines are calculated and reviewed against key cost, schedule, and technical metrics. Cost and schedule data, compiled by Work Breakdown Structure, are vigilantly monitored for any variances against a contract baseline plan. The Performance Measurement System is working as designed. It has become an effective tool in helping us to determine exactly where to focus management attention. It is equally important to understand how to interpret and apply the data yielded by this tool. The Performance Measurement System is one tool used to identify cost and schedule variances against a contract baseline at a specific point in time. It does not take into account contractor resources or budgeted program reserves which can be used to take corrective action. NASA has adequate reserves in fiscal year 1996 to cover known problem areas. Due to aggressive budget controls, the program has $3 billion in reserves available. The schedule baseline has built-in margin for flexibility as we plan for each flight. The key point here is that NASA may use some reserves to maintain schedule flexibility, but is in no danger of broaching the $2.1 billion annual ceiling.

I consider this review another example of how this program, the International Space Station and NASA have fundamentally changed. A process was established to identity problems before they overtook the program and then to indicate the steps necessary to fix the problem. Will there be problems again? It is certainly possible in a program of this size, but the lesson here is that the process to identify and begin to fix these problems is working.

The budget request for the Space Shuttle program supports two major components: Safety and Performance Upgrades and Space Shuttle Operations. The fiscal year 1997 funding requests are $636 million and $2,519.9 million respectively. Safety and Performance Upgrades funding supports the modifications and improvements to the flight elements and ground facilities, including expansion of safety and operating margins, enhancement of Space Shuttle capabilities to meet customer requirements, replacement of obsolete systems, and upgrades required to meet environmental regulations. Shuttle Operations funding supports hardware production, ground processing, launch and landing, mission operations, flight crew operations, training, logistics, and sustaining engineering to maintain and operate the Shuttle fleet. In addition, this budget includes funding for facilities directly related to Space Shuttle.

The fiscal year 1997 budget request for Payload and Utilization Operations of $271.8 million supports the operation of the Spacelab systems, payload operations for accommodating NASA payloads, Advanced Projects, and the preservation of an Engineering and Technical Base (ETB) capability at the human space flight centers.

## SPACE SCIENCE

As our budgets shrink, so must our spacecraft. In the last few years NASA's Space Science Program has removed over $6 billion from its planned spending and has reengineered all aspects of the way it does business. Life cycle costs have been reduced by factors of between 5 and 10, while scientific capability has been maintained or increased. The average cost of spacecraft development from fiscal year 1990–1994 was $590 million. By 1999, it will be about $200 million and, after the turn of the century, will drop to about $100 million. At the same time, NASA is decreasing development time from an average of eight years in fiscal year 1994, to three years by the turn of the century. As spacecraft development becomes less expensive and accomplished in a shorter time, NASA will be in a position to expand the number of Space Science missions. NASA's objective is to increase the annual flight rate from an average of two in fiscal year 1990–1994, to up to 12 per year after the turn of the century, assuming some new, low-cost launch vehicles have been made available by that time. In fact, the number of Space Science spacecraft launched continues to grow, from an average of two per year in fiscal year 1990–1994, to five per year in fiscal year 1995–1999 and six per year planned for fiscal year 2000–2004.

In fiscal year 1997, the budget request for Space Science is $1,857.3 million. The Space Science Enterprise continues a robust program of flight development activities. Space Science is now reaping a scientific bonanza as well as growing public interest from ongoing programs, such as the Hubble Space Telescope and the Galileo Mission to Jupiter. The program is looking forward to a high tempo of activities in

1997, which includes the launches of two missions to Mars and the second Hubble servicing mission.

Although the Space Science budget declines from fiscal year 1996 to fiscal year 1997, the level of activity does not. The decline is caused by the winding down of two major programs, AXAF and Cassini, as they approach the end of development and launch, as well as by the completion and launch of the NEAR, Mars Pathfinder and Mars Global Surveyor by the end of calendar year 1996. Funding is included to continue all of the ongoing development programs, including the Mars Surveyor program, Discovery program and Explorer program. All these programs emphasize frequent, low-cost missions on small to medium-sized spacecraft.

Funding is also included to continue the New Millennium program. While making spacecraft more reliable and fully autonomous, this program will also bring down the cost of development, launch, operations and data reduction. The New Millennium program is a partnership between programs for Space Science and Space Access and Technology, and consists of five Integrated Product Development Teams made up of industry and university partners. They will lead the development and delivery of advanced technologies in the areas of autonomy, communications, microelectronics and modular architectures, multifunctional systems and science instruments, and micro, electro, and mechanical systems. Some revolutionary, high-risk technologies will be tested in space through a continuing series of "demonstration" missions starting in 1998. When proven, these technologies will be incorporated into NASA spacecraft.

## MISSION TO PLANET EARTH

Mission to Planet Earth is generating solid science results today leading to a better understanding of global climate change and producing practical benefits for farmers, foresters, and businesses among others.

The fiscal year 1997 budget request for MTPE is $1,402.0 billion, an increase of $112.7 million over the fiscal year 1996 level. With the launch of the EOS series, we will begin to gain a comprehensive understanding of the Earth as a system and the interaction between the air, sea, land, ice, and atmosphere. This science-driven, peer-reviewed program takes an evolving implementation approach; we have had nine external reviews and numerous internal reviews over the past 14 years. We have reduced program costs for the space and ground segments of EOS through 2000 from an estimated $17.0 billion to $6.8 billion. The program has preserved the basic core set of 24 science measurements while changing from six very large, costly spacecraft to at least 18 medium and small spacecraft. Mission to Planet Earth will incorporate advanced technology in the second and third phases. Based on investments today, our out-year program costs will decrease by 30 percent—resulting in billions of dollars in savings, in addition to the 60 percent already removed from the program budget through 2000. MTPE program evolution will result in the average spacecraft development time decreasing by greater than a factor of 2, increasing the annual flight rate by almost a factor of 5, and decreasing the average spacecraft development cost by a factor of 3.

NASA is fundamentally changing the MTPE program. MTPE is a key player in the New Millennium Program (NMP), a coordinated NASA/commercial partnership incorporating next generation technologies such as lightweight, low-cost instruments which improve performance and decrease mission costs in the future. Another innovative NASA program, Earth System Science Pathfinder (ESSP), will capitalize on new scientific understanding and emergent technologies in the design of a series of small, rapid-development science missions. They are limited to a life-cycle cost of $120 million or less, development times of 24–36 months and provide opportunities for new commercial partnerships. NASA has included $50 million in MTPE's budget request for fiscal year 1997 to purchase science data from the commercial sector; a Request for Information will soon be released to determine the opportunities available to MTPE. We are also developing a Commercial Strategy, for MTPE which is designed to drive down the cost of science data by exploiting cutting-edge and rapidly emerging industry technologies and capabilities to help meet important Earth science requirements and commercial needs. Before finalizing the Commercial Strategy, NASA plans to release the document for extensive consultation with the science and commercial communities. To create an environment conducive to rapid and continuous technology development and to prevent duplication of private sector activities, MTPE is instituting comprehensive implementation reviews every two years, allowing NASA to develop the best plan for working with our scientific, commercial, and international partners to meet our critical science needs with the most innovative approaches.

Like many of our programs, MTPE benefits from significant international participation. Through the first phase, 19 countries have already directly invested $3.5 billion. Those nations have also invested nearly $4 billion in complementary international Earth observation missions for which the United States provides no financial support, but from which we receive data. This totals $7.5 billion of international investment—roughly equal to the U.S. investment in Mission to Planet Earth during the first phase of the program.

## AERONAUTICS

NASA's Aeronautics Program continues to lead the world in pioneering high-payoff technologies for our customers in the Department of Defense, Federal Aviation Administration, and U.S. industry. Aeronautics is critical to our national and economic security, and NASA plays a vital role in developing fundamental technologies that allow our military aircraft to be superior to any on Earth, enhance the safety and efficiency of the entire aviation system, and ensure significant economic returns to the Nation due to the success of U.S. companies in the fiercely competitive global marketplace. Aerospace remains the United States' leading export sector.

The fiscal year 1997 budget request of $857.8 million reflects our ability to deliver our programs for less money. Since fiscal year 1994, Aeronautics has implemented $335 million of institutional budget reductions, and over the next four years will save another $365 million as we implement the recommendations of the Zero Base Review. We have closed or reduced the operations of 88 facilities and reduced our information management costs, while maintaining our major program milestones. These austere budgets make NASA's cooperation with DOD and FAA even more important, and we are working with those agencies with the goal of meeting the Nation's needs in aeronautics in the most efficient manner, eliminating duplication and relying on each other's strengths wherever possible.

High Speed Research (HSR) remains our number one aeronautics priority. There are serious technical barriers to building a High Speed Civil Transport (HSCT) aircraft that is quiet, clean, and efficient, with fares comparable to subsonic planes. In 1990, NASA began addressing the environmental issues of noise and emissions, and last year we had very promising results. In December we reached a critical milestone—technology concept definition—that will serve as a baseline to measure future advances. The fiscal year 1997 budget request of $254.3 million will allow continued progress on the HSR Program that, once complete, should allow U.S. industry to decide whether to invest in the development of an HSCT. Market studies estimates indicate that the successful development of a domestic HSCT will result in $200 billion in sales, and 140,000 jobs for U.S. industry.

The Advanced Subsonic Technology (AST) program is making great progress by taking a systems approach to aviation; its 13 elements provide a technology foundation to ensure U.S. leadership in aircraft manufacture, aviation system efficiency and safety, and protection of the environment. Regardless of whether an HSCT will be flying in the first decade of the next century, the market for subsonic airplanes is estimated at over $800 billion over the next 20 years. The aircraft that will fill that market must be even quieter, cleaner, and more efficient than they are today, and NASA is paving the way for continued U.S. leadership with research in areas such as engine noise reduction, propulsion systems, strong, lightweight materials and fly-by-light, power-by-wire control systems. NASA also works closely with FAA on research vital to the future health of the air transportation system, including aging aircraft, general aviation, and civil tiltrotor. The fiscal year 1997 budget request for the AST program is $187.2 million.

In fiscal year 1997, High Performance Computing and Communications (HPCC), will continue important research on advanced computing tools for computational aerosciences and information infrastructure technology. NASA's HPCC program is focused on accelerating the development, application and transfer of High Performance Computing technologies to meet the engineering and science needs of the U.S. aeronautics, Earth sciences, and space science communities and to accelerate the implementation of a National Information commercial market for hardware and software vendors. NASA's HPCC effort is part of a multi-agency effort whose goal is to boost supercomputer speeds one thousand-fold to at least one trillion arithmetic operations per second—one teraflop—and communications capabilities one hundredfold.

The Research and Technology Base for decades has led the world in aeronautical breakthroughs and advanced aviation concepts, and we intend to continue that tradition while becoming more efficient. For example, the X–36, a remotely piloted, tailless research aircraft, was rolled out in St. Louis in March. Its development cost ⅙ less and took ⅓ the time of recent concept demonstrator aircraft. This project is part of NASA's work in High Performance Aircraft, which is focused on advanced military technologies.

## SPACE TECHNOLOGY

The Space Access and Technology program stimulates the development of advanced space technologies to improve the international competitiveness of U.S. aerospace and non-aerospace industries. The ability of the United States to compete in the global market mandates that it develop new and innovative technologies that will dramatically lower the cost to develop, build and launch new spacecraft. The budget request of $725.0 million in fiscal year 1997 supports these new technologies and brings us closer to meeting the overall goal.

The Nation faces an urgent challenge to revitalize our flagging leadership in space launch capabilities. Access to space costs too much—at roughly $10,000 per pound of payload, about ten times too much. This exorbitant expense is choking off the potential of the civil space, commercial and defense elements of our national space program. High cost means tightly-rationed access to the unique properties of orbital space, bottlenecking the abundant promise of scientific, environmental, and commercial applications which enrich our quality of life on Earth. High cost means fewer missions of deep-space exploration that project America's pioneering spirit and expand our knowledge of the Solar System; profound questions go unanswered such as whether life of any form exists or ever existed on other celestial bodies.

The fiscal year 1997 budget request of $324.7 million for the Advanced Space Transportation program supports NASA's leadership efforts in developing the technology for the next generation reusable space transportation system. The fiscal year 1997 program will include concept analysis, ground-based technology development, and a series of flight demonstrators (the DC–XA, the X–34 Small Reusable Demonstrator, and the X–33 large-scale Advanced Technology Demonstrator). Each portion of this program contributes to the process of validating key component technologies, proving that the technologies can be integrated into a functional vehicle, and demonstrating the required operability to make low cost access to space a reality.

As directed by the President's National Space Policy and subject to decision criteria agreed to with OSTP and OMB, the RLV program will face two major government and industry decision points. This year's decision will be whether the underlying technologies are sufficiently advanced to proceed with building the X–33 flight demonstrator. Approval is not a foregone conclusion, although we are determined to meet this challenge. The second decision follows X–33 ground and flight tests, when government and industry will consider whether full-scale development of an operational RLV should be pursued. At that point, if the industry and the investment community are not satisfied that the development risk is low enough to proceed to full-scale development, we in NASA will press on with technology work and do what needs to be done.

Complementary to, and directly supportive of, the RLV Technology Program is the Advanced Space Transportation Technology Program which will work to develop next-generation low-cost components maturing after the X–33 ground and flight tests. These less-mature technologies are higher risk, but offer the potential for further cost reductions beyond the RLV goals. They include propulsion components, tankage, structures, and avionics that will be applicable first to small, low-cost launchers needed to provide access to space for future small payloads.

Funding is also requested to continue ongoing efforts to provide innovative technologies to enable ambitious future space missions at a lower cost. Technologies are identified that can best meet the requirements of NASA missions across all program areas. Partnerships with industry are key to infusing new technology rapidly in science and commercial missions. The program will capitalize on advanced lightweight satellite concepts, critical subsystem and component technologies and design methodologies that have demonstrated the potential to reduce the cost of spacecraft greatly. In particular, this major effort will allow both NASA and U.S. industry to exploit the next generation of miniaturization for spacecraft components, advanced instrumentation, and sensors, and to integrate them into advanced design concepts.

## OTHER SUPPORTING FUNDING

NASA's request for Space Communications continues the critical services essential to the success of every NASA flight mission, from interplanetary spacecraft to the Space Shuttle to aeronautical flight test. Funding for components of the basic NASA infrastructure and institutional facilities is included in the Construction of Facilities budget.

As part of the ongoing effort to improve planning and budgeting for the acquisition of fixed assets and similar procurements, the President's fiscal year 1997 budget includes a separate allowance to provide full upfront funding for certain projects, which would otherwise have been funded incrementally. This allowance is included as part of the Government-wide general provisions in the Appendix of the budget. The incremental budget authority required in fiscal year 1997 for NASA projects in this category is requested as part of NASA's fiscal year 1997 budget request. The additional, post-fiscal year 1997 amounts of budget authority required for full funding are requested in the separate Government-wide general provision. As part of that allowance, NASA is requesting a total of $900 million in upfront funding—$342 million for the New Millennium initiative and $558 million for the Tracking and Data Relay Satellite (TDRS) replenishment. Upfront funding will enable better cost controls and administrative savings. The upfront funding for the New Millennium initiative is the out-year budget needed to provide the life-cycle cost, including spacecraft development, launch, mission operations and data analysis for five space missions. The upfront funding for TDRS replenishment is the out-year budget for the procurement of the three spacecraft and the associated launch services. This funding would help maintain the cost advantage of this unique fixed-price contract and could also better enable the eventual commercialization of the space network.

NASA's Mission Support request funds supporting activities which are critical to the success of NASA's programs. These functions cut across all of NASA's Enterprises, and include NASA's civil service workforce, space communications services, safety and quality assurance activities, and facilities construction activities to preserve NASA's core infrastructure. The fiscal year 1997 request for these activities is $2,562.2 million. It will support 21,030 FTE, a reduction of 525 FTE from the fiscal year 1996 budget level of 21,555 FTE. The size of the NASA workforce is heading for 17,500 by fiscal year 2000, its lowest level since the early 1960's. NASA has been out front in meeting our budget and personnel targets. We have used buyouts and other management tools to downsize in an orderly way. We are committed to continuing along this downward slope, but we remain committed to the human dignity of our employees.

Mr. Chairman, I would like to address one additional matter. On April 17, I directed that senior managers at NASA Headquarters develop a plan to accelerate the downsizing of Headquarters to a target level of 650–700 by October 1997. I have given this direction in view of the deliberate steps we are taking to delegate more program management control to NASA's field Centers as outlined in the Administrator's guidance issued in February 1996, the need to make Headquarters a more efficient and effective organization, and the overall budget constraint facing the Agency. As you know, NASA undertook an Agency-wide Zero Base Review (ZBR) last year in order to achieve $4 billion in savings from fiscal year 1996–2000. The ZBR identified a series of sweeping management and organizational savings across NASA's Centers, while preserving core programs, established clear Lead Centers and Centers of Excellence, and outlined target fiscal year 2000 civil service ceilings for Centers and Headquarters.

Since last year, we have made significant progress in redirecting accountability for accomplishing work to Centers where work is performed, reinforced by the draft guidance laying out this policy which I issued in February 1996. That guidance established that NASA Headquarters will determine "what" the Agency does and "why" the Agency does it, but the field Centers will assume full responsibility for determining "how" the program is implemented. My guidance did not constitute detailed implementing instructions for restructuring NASA program management, but rather set the course for a deliberate transition. On April 17, I directed senior management at NASA Headquarters to develop restructure plans to meet the lower target total for Headquarters. We will analyze their responses in making decisions on the final target Headquarters staffing level. The structure and content of Headquarters' corporate role must be established for us to proceed with detailed planning for Center structure and staffing. We intend to continue to explore whether transfers of Headquarters employees to the field can be accomplished, but we expect the total number of transfers to be small, consistent with our commitment to address Headquarters workforce issues without significantly impacting Center planning activities. We also intend to explore all other options to facilitate Headquarters downsizing, including aggressive outplacement and buyout authority, if the Administration determines to request such legislation. Finally, I would like to emphasize that what I have directed is a planning exercise to achieve a significantly reduced Headquarters workforce at an accelerated rate. I have not directed that a reduction in force be implemented at this time, nor have I determined what the final target Headquarters population will be. However, it is our firm intent to proceed with an analysis of a measurably streamlined, corporate Headquarters for NASA, and our firm intent to ensure that all our employees are treated with utmost dignity as this process proceeds.

Mr. Chairman, it is never easy to effect significant change. But we must. The stakes are enormously high: they are no less than the future viability of the Nation's space program, enabled by a vigorous, world-class U.S. space launch capability. If this Nation is to remain a preeminent leader in exploring and utilizing the unique frontiers of space, we must face up now to the changes needed. Mr. Chairman I hope that you and the Committee understand NASA's determination to continue to implement innovative, ultra-efficient management techniques. NASA has no monopoly on the best ideas, and we continue to seek the advice of our friends, critics, employees, contractors, and our Committees of jurisdiction. We have been criticized in the past for reluctance to cut programs; however, our recent record shows we have made hard choices by terminating the Space Exploration Initiative, National Aerospace Plane, New Launch System, Advanced Launch System, and Advanced TDRSS. We have restructured and reduced CASSINI, AXAF, and EOS—without sacrificing science content—TDRSS, the Space Station, and cut back on Space Shuttle infrastructure and flight rate. Our programs today are as trim as we know how to make them, but we are still not finished. We realize that "value for money," relevancy, and results will be the watchwords as we encounter the austere budgets of the future. As we have helped lead this Nation into the space age and into the computer age, so NASA is resolved to lead the way for efficient, effective, low-cost Government operations into the next century.

### NATIONAL AERONAUTICS & SPACE ADMINISTRATION

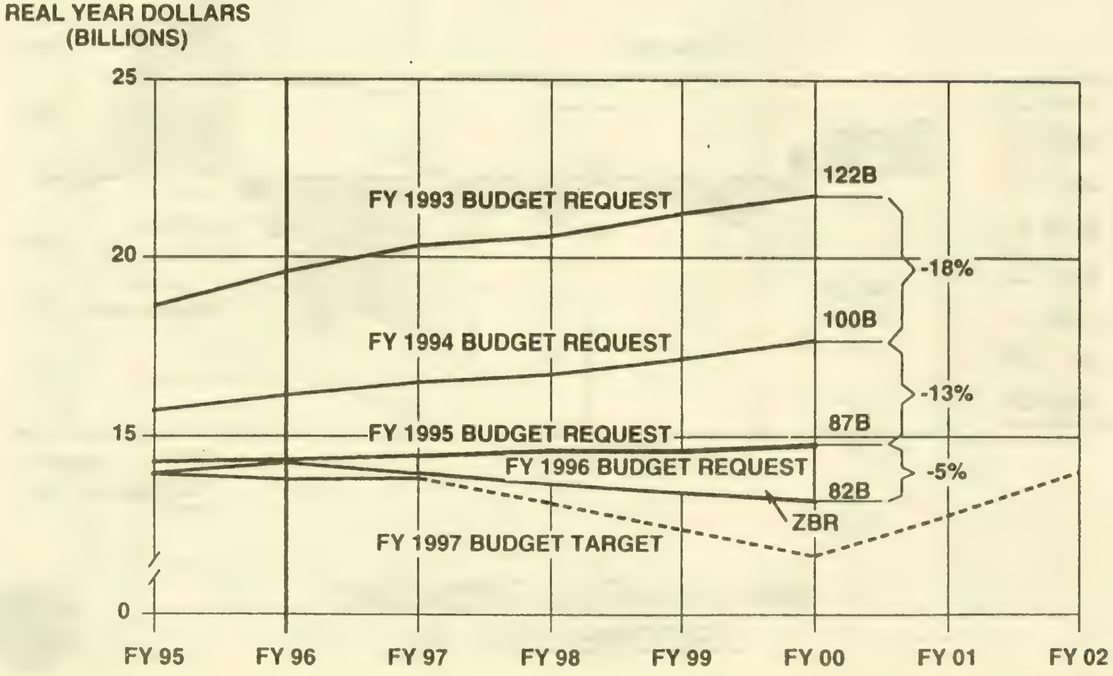
### FY 1997 BUDGET SUMMARY
(MILLIONS OF DOLLARS)

| | 1995 | 1996 | 1997 | CHG FY96/97 | % |
|---|---|---|---|---|---|
| HUMAN SPACE FLIGHT | 5,514.9 | 5,456.6 | 5,362.9 | -93.7 | -1.7% |
| % OF TOTAL | 39.4% | 39.3% | 38.8% | | |
| SPACE STATION | 1,889.6 | 1,863.6 | 1,802.0 | -61.6 | -3.3% |
| US/RUSSIAN COOPERATIVE PROGRAM | 150.1 | 129.2 | 138.2 | 9.0 | 7.0% |
| SPACE SHUTTLE | 3,155.1 | 3,148.8 | 3,150.9 | 2.1 | 0.1% |
| PAYLOAD AND UTILIZATION OPERATIONS | 320.1 | 315.0 | 271.8 | -43.2 | -13.7% |
| SCIENCE, AERONAUTICS AND TECHNOLOGY | 5,917.4 | 5,928.9 | 5,862.1 | -66.8 | -1.1% |
| % OF TOTAL | 42.3% | 42.7% | 42.5% | | |
| SPACE SCIENCE | 2,032.6 | 2,032.6 | 1,857.3 | -175.3 | -8.6% |
| LIFE AND MICROGRAVITY SCIENCES AND APPLICATIONS | 467.4 | 488.5 | 498.5 | 10.0 | 2.0% |
| MISSION TO PLANET EARTH | 1,344.1 | 1,289.4 | 1,402.1 | 112.7 | 8.7% |
| AERONAUTICAL RESEARCH AND TECHNOLOGY | 845.5 | 845.9 | 857.8 | 11.9 | 1.4% |
| NATIONAL AERONAUTICAL FACILITIES | 36.0 | | | | |
| SPACE ACCESS AND TECHNOLOGY | 605.4 | 641.3 | 725.0 | 83.7 | 13.1% |
| MISSION COMMUNICATION SERVICES | 481.2 | 441.3 | 420.6 | -20.7 | -4.7% |
| ACADEMIC PROGRAMS | 106.2 | 106.9 | 100.8 | -6.1 | -5.7% |
| SCIENCE, AERONAUTICS & TECHNOLOGY ADDITION | | 83.0 * | | -83.0 | |
| MISSION SUPPORT | 2,548.3 | 2,483.1 | 2,562.2 | 79.1 | 3.2% |
| % OF TOTAL | 18.2% | 17.9% | 18.6% | | |
| SAFETY, RELIABILITY AND QUALITY ASSURANCE | 38.7 | 37.6 | 36.7 | -0.9 | -2.4% |
| SPACE COMMUNICATION SERVICES | 225.0 | 269.4 | 291.4 | 22.0 | 8.2% |
| RESEARCH AND PROGRAM MANAGEMENT | 2,149.6 | 2,052.8 | 2,078.8 | 26.0 | 1.3% |
| CONSTRUCTION OF FACILITIES | 135.0 | 142.4 | 155.3 | 12.9 | 9.1% |
| GENERAL ADMINISTRATIVE REDUCTION | | -19.1 * | | 19.1 | |
| INSPECTOR GENERAL | 15.8 | 16.0 | 17.0 | 1.0 | 6.3% |
| % OF TOTAL | 0.1% | 0.1% | 0.1% | | |
| TOTAL BUDGET AUTHORITY | 13,996.4 | 13,884.6 | 13,804.2 | -80.4 | -0.6% |
| FULL TIME EQUIVALENTS | 22,164 | 21,555 | 21,030 | -525.0 | -2.4% |

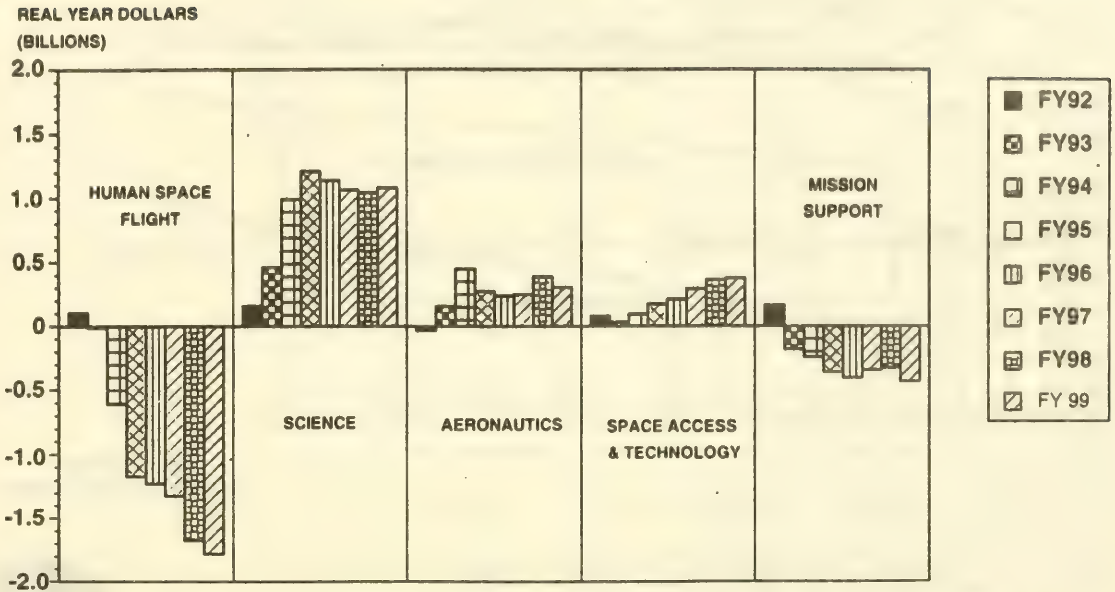
INCREASE IN FUNDING REQUEST FOR RESEARCH AND PROGRAM MANAGEMENT REFLECTS IMPACT OF 3.1% PAY RAISE ANTICIPATED FOR JANUARY 1997

*REFLECTS FUNDING ALLOCATIONS WHICH HAVE NOT BEEN DISTRIBUTED.

# FY 1997 PRESIDENT'S BUDGET

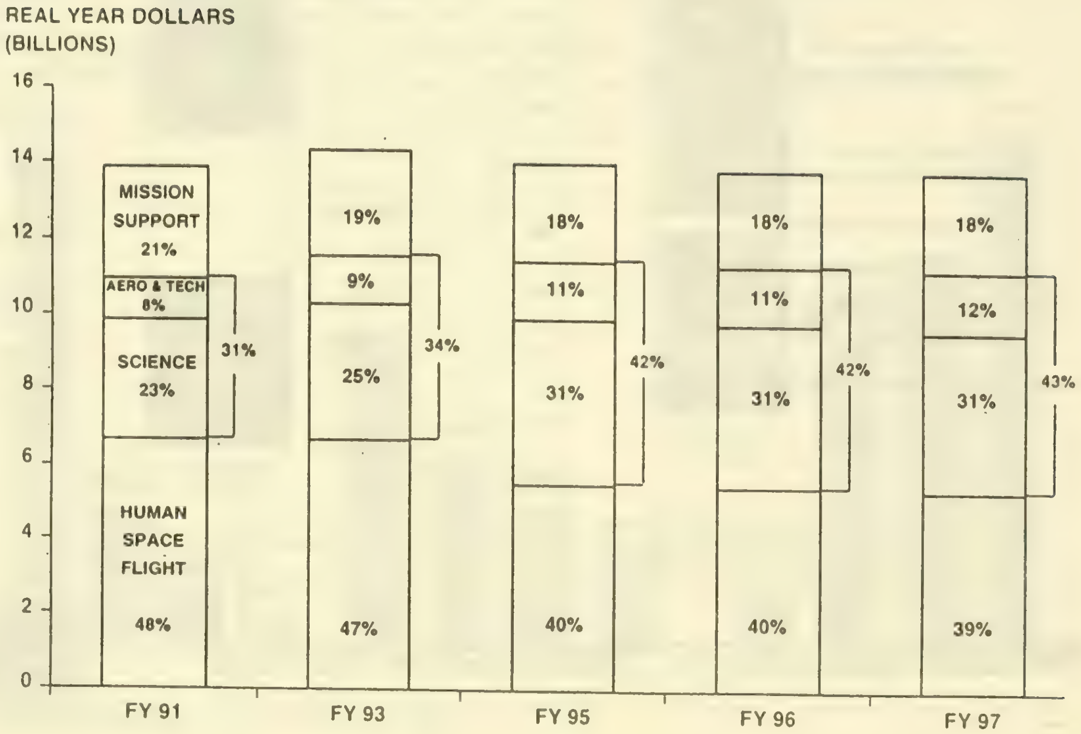


# FY 1997 BUDGET
# CHANGES FROM FY 1991



THE ABOVE INFORMATION DOES NOT REFLECT THE OUTYEAR TARGETS THAT WILL BE DIRECTED BY THE ADMINISTRATION

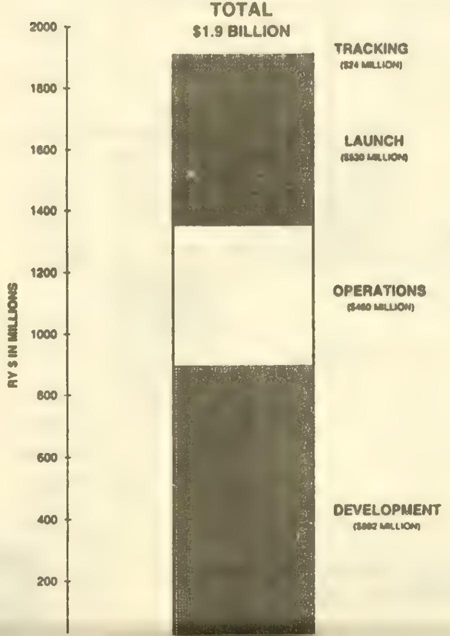
# FY 1997 BUDGET



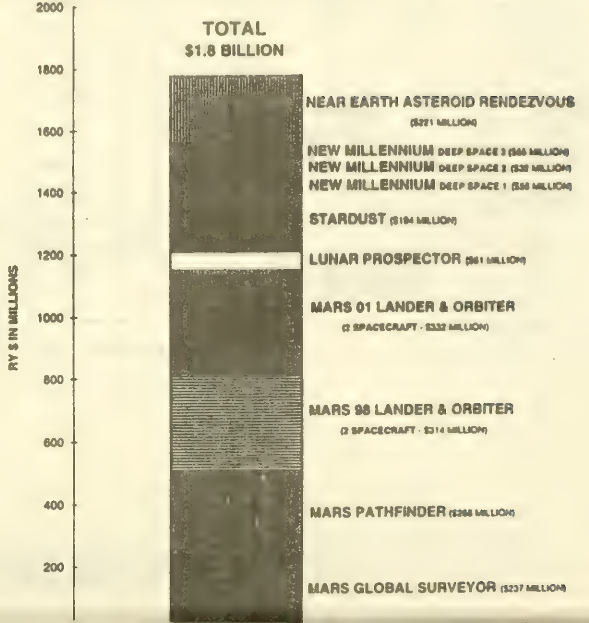
4/24/96

# GALILEO vs NEW SMALL PLANETARY MISSIONS

**GALILEO**
**TOTAL LIFE CYCLE COST**

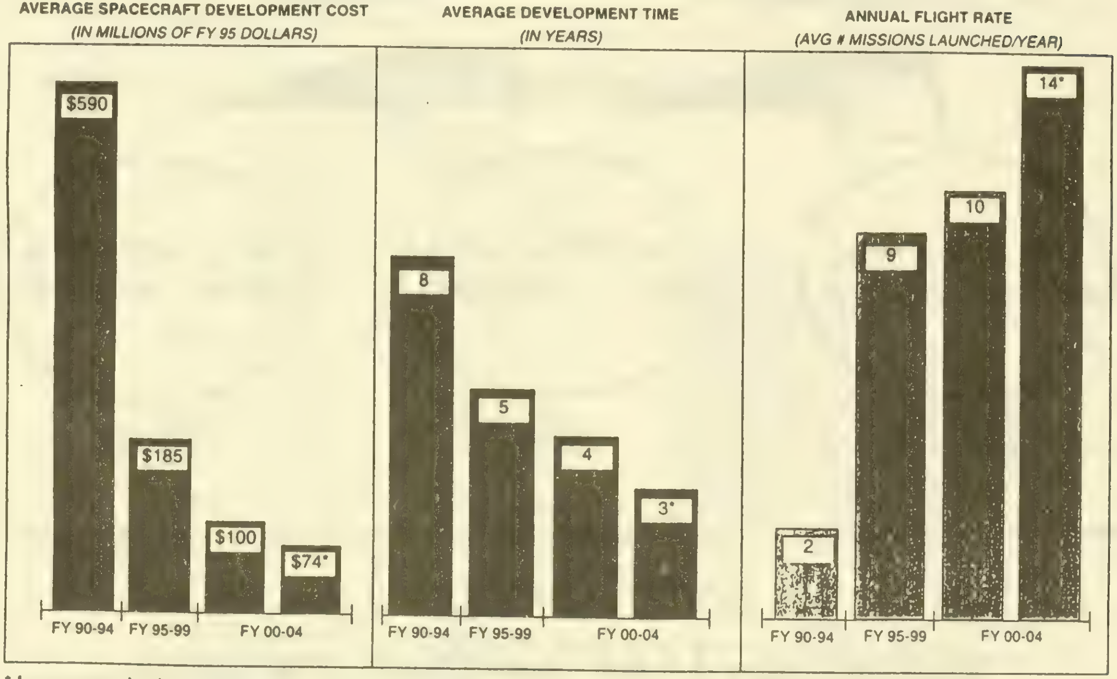


**12 SMALL PLANETARIES**
**TOTAL LIFE CYCLE COST**



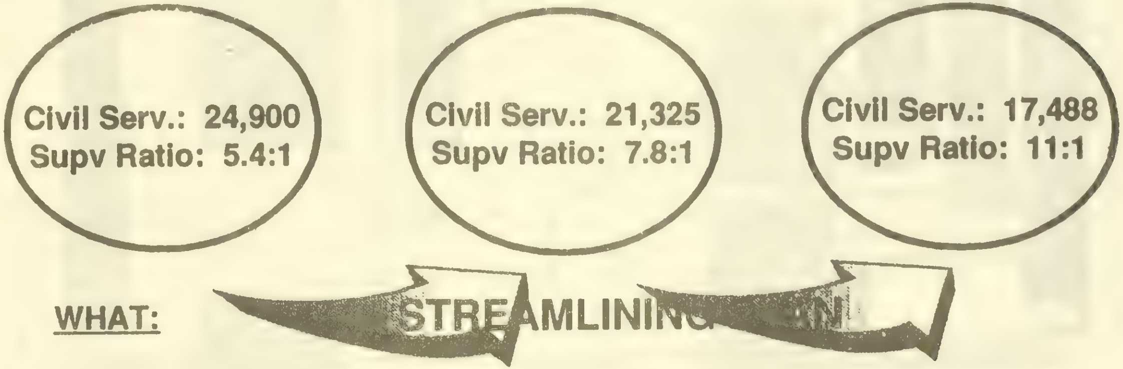
# TOTAL NASA EARTH AND SPACE SCIENCE

## FASTER, BETTER, CHEAPER



* Less expensive launches enable additional UNEX flights

# NASA Restructuring Progress
## FY 1993 - FY 2000



**THEN**

**Civil Serv.: 24,900**
**Supv Ratio: 5.4:1**

**NOW**

**Civil Serv.: 21,325**
**Supv Ratio: 7.8:1**

**FUTURE**

**Civil Serv.: 17,488**
**Supv Ratio: 11:1**

**WHAT:** STREAMLINING

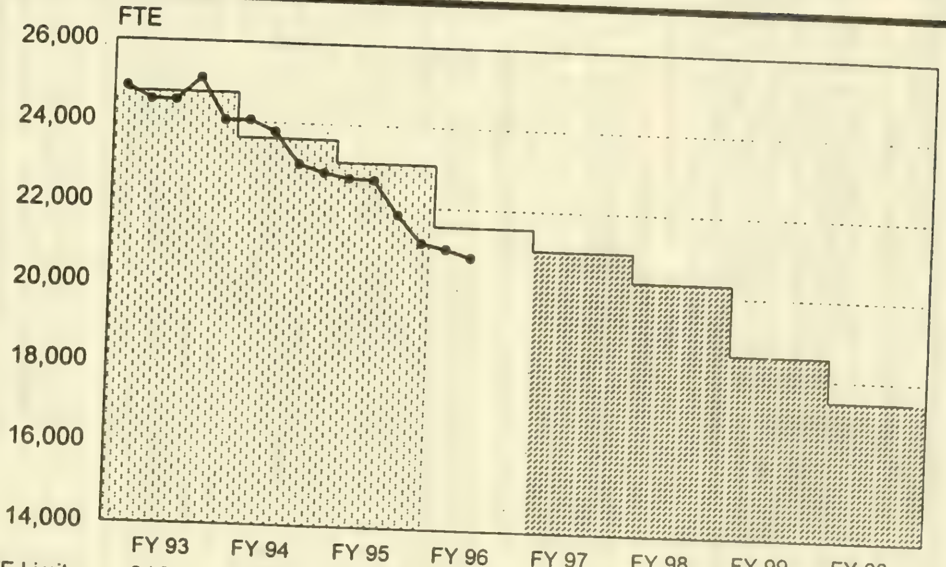
**TOOLS:**

Buyouts;
Hiring Freeze;
Restructure;
Redeployment

Consolidation;
Privatization;
Outplacement;
Redeployment

# NASA FTE Civil Service Reduction Plan

With end of quarter actual usage rates



| | FY 93 | FY 94 | FY 95 | FY 96 | FY 97 | FY 98 | FY 99 | FY 00 |
|---|---|---|---|---|---|---|---|---|
| FTE Limit | 24,731 | 23,623 | 23,075 | 21,555 | 21,030 | 20,310 | 18,580 | 17,488 |
| **Current Estimate:** | | | | **21,325** | | | | |

NASA Management reviews each Field Center's staff reduction plan as the annual Agency budget is prepared. Downsizing progress metrics are prepared and reviewed quarterly.

S:/METRICS/CNT2 3/30/96 Data

Senator BOND. Thank you very much, Mr. Goldin. We have been joined by Senator Burns, who chairs the authorizing subcommittee.

Senator Burns, welcome. Do you have an opening statement?

### STATEMENT OF CONRAD BURNS

Senator BURNS. I have an opening statement. I would submit it for the record. I want to welcome the director here.

We just had a hearing this morning on mission to planet Earth, a very good hearing this morning with some demonstrations, and we think we are headed in the right direction, and I commend the director and all the people that are in that part of NASA. It looks very interesting.

### PREPARED STATEMENT

I will put my statement in the record and have some questions later. Thank you.

[The statement follows:]

### PREPARED STATEMENT OF SENATOR CONRAD BURNS

Mr. Chairman, thank you for holding this hearing today. I look forward to continuing to evaluate the $13.8 billion budget request for NASA. As the Chairman of the Science, Technology and Space Subcommittee, I am very interested in hearing the testimony which will be given today.

I believe the fiscal year 1997 budget request helps NASA carry out its bold challenges in space and aeronautics by carrying forward all of its major current programs. I have long been concerned that the pressure to reduce agency budgets had resulted in NASA's budget being cut to the bone. At some agencies that might be a good idea, but at NASA that approach does not work. Bold visions like Space Station and Mission to Planet Earth cannot be done "on the cheap." You must do them right, or not at all. That is why I am pleased the budget request maintains NASA spending roughly at its fiscal year 1996 level.

Last year, I applauded NASA when it developed a plan to cut $5 billion in five years from its budget without compromising program content or safety. In fact, its plan became a model for other agencies throughout the federal government. The only weakness in the plan was its failure to specifically identify how the cost savings were to be achieved. Much of the cost savings were allocated to "unresolved reductions"—which suggested that NASA itself was not quite clear on where the cuts would come from.

The fiscal year 1997 budget request submitted earlier this month unfortunately shed little further light on this issue. Since fiscal year 1997 is the first year covered in NASA's five-year budget-cutting plan, this seems an appropriate time to revisit that plan and obtain a clearer picture of its impact on NASA's programs and activities.

I want to commend NASA on requesting full funding for Mission to Planet Earth. This program has come a long way in recent years. Originally, it was misperceived as being exclusively focused on global warming and developing justifications for caps and timetables on industry emissions. Now we realize it is much broader than that.

From last year's authorization hearing, we know it is really about using satellite technology to help farmers predict weather on a year-to-year basis and measure soil moisture using a desk-top computer. It is about giving land planners, mappers, and foresters a cost-effective tool to help them do their work. It is about mineral exploration and archaeology. In short, Mission to Planet Earth is about using NASA's satellites to help average citizens in their everyday activities.

At Montana State University and other institutions in the Plains States, our researchers are already eager to gather data from the program so they can start developing useful applications for the community. It is time to proceed with carrying out the sound baseline plan for the program and not get sidetracked by calls for delays, cutbacks, and unnecessary studies from vocal opponents of this important initiative.

Again, Mr. Chairman, thank you for holding this hearing. I look forward to continuing to work with you on coordinating our efforts between the appropriating and authorizing subcommittee.

## SPACE AND AERONAUTICS BUDGET REDUCTION

Senator BOND. Thank you very much, Senator Burns.

Mr. Goldin, as I indicated in my opening statement we had projections of continuing growth in the late eighties and early nineties, and a new reality set in a couple of years ago. The then-ranking member of our subcommittee, our colleague from Texas, Senator Gramm, recommended the preparation of a decision tree to assist in assessing the effect of potential budget cuts by Congress on individual NASA programs.

We now seem to be at a point where the Administrator of NASA needs his own decision tree, since the President's budget not only predicts a decline but an unprecedented string of very large cuts.

We were very impressed with the way you handled the $4 billion budget cuts which the administration proposed in the years 1997 and 2000, but now in an unpleasant surprise for those of us who are very interested in the space and aeronautics program we see a further budget reduction by 2000 totally almost $3.2 billion. I do not see any explanation of how the reduction could be accommodated without grievous disruption of ongoing missions, programs, and activities.

Now, I understand you have been told that the numbers should be expected to change for the out-years, so there is no need to defend any specific funding level in his budget, nor any likely programmatic consequence of such funding levels. Is that your understanding?

Mr. GOLDIN. Yes; and based upon assurances I have had by discussions with the administration, I expect that as the clarity comes into focus the out-year budgets will change. It is only just a few weeks since we got a fiscal year 1996 budget. Here we are working the 1997 budget, so I remain optimistic.

Senator BOND. Two weeks ago, Secretary Brown of Veterans Affairs told this committee that the substantial reductions beyond the coming fiscal year would be negotiated later, and implied that they would be shifted to other discretionary activities.

Frankly, I was very dubious that that can and will be done, but if that budget is restored, then there would have to be even greater cuts in the budgets such as NASA. I assume that you are in a position where you cannot accept, or cannot plan for any further reductions beyond what is the current pattern, or the current plan.

Mr. GOLDIN. Let me say this, that the White House has instructed us to take no precipitous action on out-year budgets, and we are taking them at their word. However, we did not propose any new cuts—I am sorry, any new programs in this year's budget. What we are doing is, we are continuing ongoing studies and technology demonstrations, so at the point in time we know where we stand we could make decisions relative to new starts.

The second point I would like to make is OMB's associate director for communications, Larry Haas, was quoted in a recent news article saying Dan Goldin's efforts to reinvent NASA are well recognized within the White House. I would not read too much into the arithmetic formula that we use in the out-years.

So it is correct that we have no new starts, but we are working on these new studies, these new missions, but not starting them.

We would like to be prudent. The development phase for these programs presumes a less precipitous decline than stated, so we will have to be careful on that score, but until given other directions we will not take precipitous actions on terminating any programs we have right now.

Senator BOND. Well, that makes it very interesting, because Mr. Haas is the same one who said that I was misrepresenting the President's budget when I quoted the numbers from the budget book in terms of what would happen to the Veterans Administration, so if anybody finds out what the budget numbers are, you have my telephone number. Please give me a call. I would like to know what the budget proposal is.

Let me turn quickly to another couple of questions, and then I will have to leave and call on my ranking member for her comments, and ask Senator Burns to chair the rest of the hearing.

### WIND TUNNELS

Wind tunnels. We have talked a lot about wind tunnels, Senator Mikulski and I. I thought they were very necessary to help our aircraft industry compete with foreign entities. I was very disappointed about the decision earlier this year to abandon the effort. Could you tell me the reasons for the decisions, and what steps NASA can take to address the critical need to improve wind tunnel testing for domestic manufacturers?

Mr. GOLDIN. The administration, when faced with extremely tight Federal budgets in the foreseeable future, decided not to pursue the national wind tunnel complex. This complex would have cost $1.2 billion. At the time that the money was appropriated, there was $400 million in budget authority, and I think about $35 million in outlays.

At the time, we were optimistic that the industry would have been able to make, or would be able to make a significantly larger contribution than they finally were able to come up with. We also had some hopes, although they were not very well defined, that the DOD might be able to cost share this activity with us.

As we went through and took a look at the budget situation, the industry ability to participate financially, and the DOD's ability to participate financially, we could not come up with the missing outlay money, and additionally, it turned out for us the industry was able to come up with $150 million to $200 million, so that meant we needed another $600 million in budget authority and close to $1.2 billion in outlays, and we could not figure out how to put it in.

We think that it is an important activity for the Nation, so toward that end we are taking a look at some other things we might do with regard to our existing facility and complementary computational capabilities, and we are in the process of coming up with a plan on productivity upgrades to the 11-foot and 12-foot facilities at NASA-Ames, and the complementary analysis tools that will make them even more productive, and we should be in a position to talk about that in the weeks ahead.

## RESTORING GENERAL REDUCTIONS

Senator BOND. We look forward to that. The appropriations bill finally signed into law had another $83 million added to your budget. Our intent was to restore general reductions made in space science, life, and microgravity sciences, aeronautical research and technology.

Subject to reprogramming, could you give the status of your recommendations for the applications of these funds?

Mr. GOLDIN. I would like the NASA Comptroller to answer that, if that is OK.

Mr. PETERSON. Yes, sir; we are in the position now of formulating our final operating plan letter to you, and in there we are going to propose that of that $83 million, $10 million be restored to the mission to planet Earth to offset the reduction there, $20 million be restored to aeronautics, largely for the high altitude remote sensing aircraft, and $4.5 million be put into space technology for a couple of spacecraft remote sensing activities, and then $45.5 million be put into the Stennis Propulsion Test Center of Excellence in order to finish the started and then stopped component test facility and finally, $3 million into the academic programs environment to handle such activities as the Discovery Center and the World Teachers Center.

## SPACE LAUNCH TECHNOLOGY

Senator BOND. Thank you.

A final question, Mr. Goldin. NASA is pursuing new space launch technology to make significant reductions in the very high cost of current systems needed to put payloads into orbit. There are a lot of questions on the likelihood of success. I was disappointed to learn of the X–34 contract termination, and have some questions over the cost profile of the X–33.

Could you give us a quick assessment of how these programs are going? I think we need to maximize progress and if delays occur we may have to extend the use of our shuttle system well into the next century, have you taken a look at contingencies, in addition?

Mr. GOLDIN. Yes, sir; in fact, the X–34 termination was a disappointment, but the good news was, the money did not get spent, so we entered into a new arrangement, cooperative agreements with industry instead of cost-type contracts, because this is an opportunity to do partnering with industry.

When industry recognized that they could not have a commercially viable approach, they came to us, they said, this does not work, we recovered most of the money, and we were able to go back out on competition.

Right now, we are evaluating proposals on the X–34 program, and we believe we will be able to meet the commitment we made to the Nation that we will be flying a vehicle in the summer of 1998. That vehicle will go to Mach 8. The X–33 competition also is ongoing and proposals are in.

I do not know what the proposals look like, as I am not a source selection authority, but we hope by July 1 to be able to announce the winner in that competition.

Recognizing the concerns that the Congress had relative to the funding profile in our proposal for fiscal year 1997, we brought more up-front funding, because the profile had stretched it too far into the out-years, so we think we have corrected that deficiency, and I look forward to the possibility of just opening up the space frontier with a new way of doing business on these vehicles in cooperative agreements, rather than direct cost-type contracts.

Senator BOND. All right. Thank you very much, Mr. Goldin.

Let me turn now to my distinguished ranking member. My apologies, Senator. We both have lots of things going on on the floor, and I apologize for starting without you.

Senator MIKULSKI. Are you going to offer a VA amendment? Do I have to leave and go rebut you?

Senator BOND. Probably. I was going to raise the money on VA, but I will let you give your opening statement and ask such questions as you need, and I will talk slowly on the floor.

Senator MIKULSKI. I do not believe it. [Laughter.]

### PREPARED STATEMENT OF BARBARA MIKULSKI

Mr. Chairman, I ask unanimous consent that my opening statement be included in the record.

The thrust of it really is to talk about the importance of this hearing, and to determine the consequences of NASA's funding outlook and the impact on future programs on personnel and its impact on the overall mission, and so I would ask unanimous consent that it be included in the record.

[The statement follows:]

### PREPARED STATEMENT OF SENATOR BARBARA A. MIKULSKI

Thank you, Mr. Chairman. Welcome Mr. Goldin and good morning to everybody.

Mr. Chairman, I am pleased that we are having this hearing today, but I have to admit that this is a hearing that causes this Senator a great deal of concern. I am alarmed by the NASA budget proposal, not so much by the budget request for fiscal year 1997, but by the implications of the out-year budget proposals for NASA's future.

Mr. Chairman, I know you also serve on the Budget Committee, and deal in the mysterious world of out-year projections. But we are both Appropriators, and as an Appropriator, I am used to dealing with one year at a time. I know that no matter what the annual budget resolution recommends, this Subcommittee ultimately has to deal with the reality of the 602(b) allocation dealt us by the Full Committee.

But as the Chairman indicated, we have to consider the implications of these numbers for on-going NASA programs—programs like the international Space Station, space science, safety upgrades to the shuttle, and Mission to Planet Earth. These are all programs vital to the NASA mission; they are programs that translate into jobs—jobs today and jobs tomorrow.

Mr. Chairman, this is an important hearing because today we will attempt to determine the consequences of NASA's funding outlook and the impact on the future mission of our space program as well as the future of our space agency.

At the same time, we cannot ignore the implications of these numbers on the morale of the hardworking people—Federal employees and contractors—whose contributions have made NASA the world's premiere space agency. The NASA out-year budget is a morale buster.

I look forward to hearing the Administrator address these concerns today. I look forward to working with him to ensure that as a new "faster, better, cheaper" NASA moves toward the new millennium, we get there without sacrificing science, without sacrificing quality, and without sacrificing the human investment that has made the U.S. the leader in space science.

Senator BOND. I might say, Senator Shelby has joined us. Senator Shelby, do you have an opening statement?

Senator SHELBY. Not at this time thank you, I will have some questions when it is my turn.

[CLERK'S NOTE.—Senator Campbell was unable to attend this hearing, but requested that his statement be made part of the record.]

[The statement follows:]

### PREPARED STATEMENT OF SENATOR BEN NIGHTHORSE CAMPBELL

Mr. Chairman, I would like to join my colleagues in welcoming the officials of NASA and thank all of you for taking the time to come before this committee today and present your fiscal year 1997 budget request.

I would like to begin by reminding us all today of NASA's mission "of exploration, discovery, and innovation". This mission, at first glance, appears to be obscure, but I think, some of us forget to take a second look and think about the work of NASA and how it touches all of our lives and all of our states.

I'm not talking merely in terms of economic benefits for those states directly affected by the space program. I'm talking about the practical benefits and spinoffs that are a direct result of the space program. In the past, NASA has been responsible for valuable medical and scientific breakthroughs which have been achieved as a direct result of the space program. For instance, NASA can boast their research has contributed greatly to the following applications in life sciences: the programmable pacemaker, the automatic implantable defibrillator, and the ultrasound imaging system. In addition to state-of-the-art technology research, NASA has given to this country a better understanding of the world in which we live and will continue to do so in the future.

Because of this, I feel it would be short-sighted to discontinue the funding for many of the programs NASA oversees, an effort which seems to be an annual event around here.

Having said that, I think everyone recognizes the need to balance the budget and act more fiscally responsible. In looking over your 1997 budget request, I notice your effort to continue to achieve the $4 billion decrease in NASA's overall budget, in addition to making internal changes in the way NASA does business. In addition, I noticed the agency's statement in its budget justification submitted to this committee on its continued work to increase program efficiency.

I'd like to thank NASA, which has responded to our fiscal constraints by doing its part to balance the budget. You have submitted a budget that indicates acknowledgement of these constraints. I'd also like to stress that even though we've made some progress, there is still work to do. I look forward to working with you to achieve a balanced budget, while providing the nation with a strong space program. I would like to add, however, some words of caution. While it may be more "popular" to protect the budgets of the more high-profile, hardware related projects, the scientific mission of the agency is just as vital and important to maintain and bolster. As I indicated previously, the research that has stemmed from NASA projects have blazed the trail for many tremendous developments in the scientific community and for each of the fifty states. The Congressional dollars we spend in NASA's educational-based research programs are wise investments, resulting in innovative new discoveries and developments while simultaneously providing valuable educational training to both graduate and undergraduate students for the next generation of science.

Mr. Chair, let me close by saying we would lose all of the benefits I mentioned, many of which we take for granted, by not continuing to support our space program and NASA.

I thank the Chair.

### OUT-YEAR BUDGET/REDUCTION IN FORCE [RIF]

Senator MIKULSKI. Mr. Goldin, my line of questioning in many ways reflects Senator Bond's. I am concerned not only about this year's budget, but the discussion of the out-years. Out-years, in plain, ordinary English, means the following years, is that not correct? Is that not what out-year means?

Mr. GOLDIN. That is correct.

Senator MIKULSKI. We use these arcane words, and people do not get the consequences. My line of questioning is about the consequences.

You state in your program in answer to a question that the White House has instructed you to take no precipitous action on the out-year budget and to have no negative impact on the programs, is that correct, that you are not going to cut programs?

Mr. GOLDIN. Yes; in fiscal year 1996, as we go through the process.

Senator MIKULSKI. Well, what does that mean in terms of personnel? If you do not cut a program—you announced a cut of 700 people at NASA headquarters. To me, that is cutting. What does it also mean in terms of contractor personnel?

Mr. GOLDIN. We are sticking with our plan that we set out on under the zero-based review.

I would like to clarify the 700-person cut. It is not an announcement of a RIF. It was not an announcement that 700 people would definitely lose their jobs. It was a target that was set for an analysis that is going on right now. That should be concluded by mid-July, at which point we will have a plan to know exactly what the impact is.

Senator MIKULSKI. Well, that is not what you announced to your employees. You announced there was going to be a 700-person RIF. My phone rang like it was a hurricane in Ocean City and people were wondering if they had to evacuate without warning.

Mr. GOLDIN. Well, I must apologize for poor communications, but that was not the intention of what we did in February. On February 2, I put out Administrator's guidance that talked to the approach we were going to take under the zero-based review for setting rules and responsibilities for NASA headquarters and centers. In that Administrator's guidance, we talked about the changing roles and responsibilities.

The management at headquarters started forward on a process to see what the impact would be. The senior staff at NASA, when they reviewed the response of the senior management at headquarters, namely, the Associate Administrators, found there was almost no change in the profile of the number of people at headquarters as a function of time.

Senator MIKULSKI. Do you or do you not plan to RIF 700 people?

Mr. GOLDIN. At this point in time, I do not know.

Senator MIKULSKI. What are your plans for headquarters?

Mr. GOLDIN. I do not know what the final numbers will be until we complete this exercise.

Senator MIKULSKI. When are you going to complete this exercise?

Mr. GOLDIN. Mid-July.

Senator MIKULSKI. And what is the criteria by which you are going to be making these decisions?

Mr. GOLDIN. We have a process laid out, and I would like to ask Mr. Christensen, who is in charge of that process, to talk to the details of that process.

Senator MIKULSKI. And let us be crisp about it. I have lots of questions about the space station, the shuttle safety, mission to planet Earth——

Senator BURNS. We have got the room for all day. [Laughter.]

Mr. CHRISTENSEN. Yes, ma'am, I will be short.

As Administrator Goldin has said, we are at the early stages of this analysis which was kicked off. We are having individual meetings with all the Associate Administrators. They are all coming in telling us what they believe it takes to get the job done at headquarters as redefined in the Administrator's guidance, and subsequent discussion has taken place, and it is our intention in the mid-July timeframe to have a set of recommendations for Mr. Goldin, and at that time come up here, talk to the appropriate folks, and then for Mr. Goldin to make some decisions.

Senator MIKULSKI. So what is your criteria?

Mr. CHRISTENSEN. It is a series of criteria.

Senator MIKULSKI. Give me the top three that are determinative.

Mr. CHRISTENSEN. Well, No. 1, we are looking to find the right size for NASA headquarters. No. 2, we are wanting to make very sure that the necessary fiduciary responsibilities are met in a headquarters environment. We are looking to make sure that we keep the right mixture of people in the program offices to make sure that the programs at the NASA field centers are properly coordinated. That is the sort of thing we are looking at.

### SHUTTLE SAFETY UPGRADES

Senator MIKULSKI. Well, I think we want to hear this, but as you know this had a terrible, devastating effect on morale.

Let me go, then, to the consequences on the budget. About the budget that has been proposed, could you comment on what it means to the safety of the shuttle?

Mr. GOLDIN. Yes; in a conversation I had with you, I was concerned, and I had discussions with my staff when I went back. We are preparing a plan that will identify further safety upgrades that we should make to the shuttle.

As you may know, we have expended $1 billion on safety upgrades to the shuttle in the last 3 or 4 years, and have a plan for an additional $450 million. However, given the obsolescence of certain parts, and given the advances in technology, I believe it is feasible to make even more significant upgrades to the shuttle, but this will entail additional funds.

Senator MIKULSKI. Do you need more money in order to keep the shuttle safe?

Mr. GOLDIN. I have instructed my staff to come up with a plan to identify further upgrades. That plan should be available within 6 to 8 weeks, and it should entail additional funds, and at such time we will establish and work with the OMB to see that we can incorporate these changes into the program.

Senator MIKULSKI. So you need more money in the budget to ensure the safety of the shuttle, is that correct?

Mr. GOLDIN. We will probably need some more money in the budget to make the shuttle even safer than it is today, yes.

Senator MIKULSKI. I said to ensure the safety, which means safe today, safe tomorrow, and so on.

Mr. GOLDIN. To ensure the safety.

Senator MIKULSKI. So that is something we really need to stand sentry over. There is a pretty big yellow flashing light on this budget, is that not correct?

Mr. GOLDIN. I will commit to you that safety is the No. 1 priority that I have established at NASA, and we will find the appropriate funds to ensure the shuttle's safety.

Senator MIKULSKI. Well, I think speaking for all the Senators, this would be the top priority for us and, of course, we need the shuttle not only to be safe but a reliable and usable launch vehicle in space because of the assembly of the space station.

Mr. GOLDIN. Absolutely, and we are committed to working with this committee, and as soon as we get the results of the study we will come forward, and we will not be shy about saying that we would need more money to keep the shuttle safe.

### MISSION TO PLANET EARTH

Senator MIKULSKI. Now, let us go also, then—and I am sure Senator Shelby will be asking questions about the space station, and I will reserve those questions to him and myself for a possible second round. Could you talk about the consequences of this budget on mission to planet Earth?

Mr. GOLDIN. We have got mission to planet Earth about as far as this administrator knows how to do. As you know, we have had numerous conversations in hearings. When I became Administrator, mission to planet Earth was about $11.4 billion for this decade. In the last 4 years, without eliminating any one of the 24 essential measurements, without compromising the dates at which we were committing the critical data that the scientific community is almost unanimous about, we have cut that budget down to $6.8 billion for the space segments of these missions.

We have unbelievable technology that we have incorporated. We have brought in the private sector. We are running new competitions to assure the American taxpayer that peer review is going to dominate what we are doing. I am so proud of this team, but at this point in time we do not know how we could take 25 percent additional funding out of that yearly budget as has been suggested in other quarters.

Senator MIKULSKI. Would you state what are the consequences of this budget to mission to planet Earth? Does it create a shortfall? How much is the shortfall? What do you need to have an adequate program, just like we will be looking at the space station and space science.

Mr. GOLDIN. I am not prepared to concede that we cannot cut mission to planet Earth, and as I indicated in my opening statement, I believe in discussions we have had with the OMB they are prepared to work with us to assure the vitality of core programs. Mission to planet Earth is a core program.

Senator MIKULSKI. But OMB is not an appropriator. OMB is a function of the executive branch to present a budget to Congress. We are the appropriators, and as appropriators, I ask you now, is there enough in this budget recommendation to adequately fund mission to planet Earth?

Mr. GOLDIN. Yes; in fiscal year 1997.

Senator MIKULSKI. And in fiscal year 1998?

Mr. GOLDIN. I remain optimistic that we can work the budget with the administration so that we can support mission to planet Earth.

Senator MIKULSKI. As you know, I am a strong supporter of this administration, but I do not know—I would not read too much—you are quoting Larry Haas. "I would not read too much into the arithmetic formula that we use for out-years." Well, how do you know if you have balanced the budget if you read too much into the arithmetic formulas? That is what we are here to do, read arithmetic formulas.

Mr. GOLDIN. Well, I am prepared to work with the administration to try and resolve this issue.

Senator MIKULSKI. So what you are saying, though, Mr. Goldin, and I appreciate the loyalty to the administration, is that in the out-years there is just not enough money to fund mission to planet Earth at the level required to meet our scientific——

Mr. GOLDIN. I am prepared to work with the administration so mission to planet Earth delivers the data we committed to this country.

Senator MIKULSKI. Well, I see I have a red light, but I think we have got the message if we have not gotten the answer.

Senator BURNS [presiding]. Thank you, Senator Mikulski.

Senator Shelby.

### REUSABLE LAUNCH VEHICLE [RLV]

Senator SHELBY. Thank you, Mr. Chairman.

Mr. Goldin, you have pressed for a reusable launch vehicle, an RLV, is that correct?

Mr. GOLDIN. Yes, sir.

Senator SHELBY. That will be a single stage to orbit that would have quick turnaround and, we hope, minimum maintenance between launches.

Mr. GOLDIN. Yes, sir.

Senator SHELBY. That is one of your priorities, is it not?

Mr. GOLDIN. Reusable launch vehicles are crucial if we are going to do any space in the 21st century.

Senator SHELBY. With the cooperation of the aerospace industry, the spirit of what we call faster, better, cheaper seems to be working at NASA, but to produce an RLV or another advanced launch capability that is cheaper to operate, it will not necessarily be to cheap to develop. In other words, we are going to have to put some up-front money into the development of it, are we not?

Mr. GOLDIN. Yes, sir; and we have reprogrammed our funding without coming back to Congress and asking for more money. We have already reprogrammed about $1.3 billion to put our money down and to put our money where our mouth is. We have been reluctant to reprogram more money than that for the reusable launch vehicle because we did not want to have an organic program where the program itself takes on the life, and we want to keep the companies designing, developing, building, testing, and do it in short periods of time.

Senator SHELBY. How do you basically—and I think you have been doing it pretty well, deal with the funding issue, which we are going to be pushed on from time to time every year with NASA's budget when it is declining. In other words, how do you deal with it with the American people? I think it is very important to have overall support from the American people for NASA and what you are doing and where we want to go.

Mr. GOLDIN. Well, we have made a commitment. We feel we have a contract with the American people to do what we say we are going to do, and since 1992, after we went through our restructuring of the programs in 1993, we eliminated some programs that we felt could not do what they said they were going to do. They were either too expensive, or they were unrealistically priced, or they had scientific programs associated with them.

But once we made those decisions we have met every key deadline on every program we had, and the way you keep cost under control is not change program plans. Get a plan, think it through, understand the requirements, stay with it, sign a contract, and say you are responsible and accountable, and if contractors cannot deliver, we will terminate contracts. If NASA does not perform, we will take appropriate actions in NASA. The way to save money is not to move things around, but to just commit to it.

Senator SHELBY. I understand, Mr. Goldin, from talking with you and also spending some time on the committee, that this country, the United States, has lost approximately 70 percent of its competitive launch capability to less expensive foreign launch services. In fact, there is not, to my knowledge, been a new rocket engine developed by NASA or the industry in the last 25 years, while there have been more than 25 developed internationally. Is that basically correct?

Mr. GOLDIN. I believe those numbers are basically correct, and those numbers are very scary when you think about opening the space frontier.

Senator SHELBY. Also an enormous loss to the balance of trade in the United States, is it not?

Mr. GOLDIN. Yes; to the U.S. balance of trade, but there is a worse problem, because some countries are thinking of going vertically integrated. If they could provide the launch, well, why not provide the spacecraft that goes on top of the launch vehicle. Our American space communications industry is very worried about this. This is one of the most successful high technology industries, along with aeronautics, in this country, and this is what a role of NASA should be, to do the long haul to develop these new technologies, and that is why we place such a high regard on that.

One more point I would like to make. I met with a number of space communication company executives and communication company executives not from the space business. They told me the No. 1 priority from NASA, individually they told me, was a launch vehicle that had a $1,000-a-pound price tag and not $10,000 a pound, as they have had for the last two decades.

Senator SHELBY. So basically, the advanced space transportation umbrella which we are talking about, relaunchable vehicles, bringing the quality up and doing it cheaper, is one of your priorities, and the highest priorities in NASA.

Mr. GOLDIN. It is one of our highest priorities for a new start, yes, sir.

## PROPULSION

Senator SHELBY. And we have led the world in propulsion but we have not put the money in recent years in it, is that not true?

Mr. GOLDIN. Yes, sir; our thrust is to operate at lower chamber pressures, lower temperatures, and in some cases it may not be as high reliability.

Senator SHELBY. As far as overall NASA projects, will it be propulsion? How high a priority is propulsion in NASA?

Mr. GOLDIN. Propulsion and launch—I am on the record—go together, and I indicated that is our highest priority for a new start.

## SPACE STATION

Senator SHELBY. Senator Mikulski mentioned the space station, and I will just jump into it for 1 minute with you. Where are we, and where are we going?

Mr. GOLDIN. We are about 40 percent complete on the work that we set out to do. We are roughly within 2 or 3 weeks of schedule, and the schedule we laid out in October 1993, and we are within 1 percent of the budget we projected in 1993, and that is exclusive of the reserves we set aside, and we have about 38 percent money of the remaining spending to be done in reserves, and about one-half of that is encumbered. So we have free money worth about 19 percent, which is a very robust reserve for a program at this date.

We have some problems, and we are overcoming them. We are still holding tight for launch in November 1997 for the first element, and December 1997 for the second element, and so we believe we are on track.

## NASA DOWNSIZING

Senator SHELBY. Mr. Goldin, as the Administrator of NASA, how do you feel about the streamlining and downsizing of NASA overall? How are you doing?

Mr. GOLDIN. As a human being, it is very difficult. There are nights I do not sleep. We are less than perfect as human beings, and we cannot always do everything right. I share a lot of the problems that the people share.

Let me tell you how many people we are talking about. I think since I have been Administrator there are 30,000 less people working on the NASA payroll in industry and Government. This is not a fun place to be, but I put my hand on the Bible when I became Administrator, and I swore I would carry out what the President wanted me to do, and by God, I will do that.

This is what the American people want. They want Government that costs less, but they want it to be more effective, but as Senator Mikulski points out, there are human beings involved. We try and do our very best to be humane, and in the case that Senator Mikulski pointed out, I accept responsibility. I did not communicate clearly, and I caused grief to some of my employees. I do not cherish that.

On the other hand, it is not the easiest thing to be at NASA for the first time in years when the budget keeps coming down, but I come back and say, I took an oath of office, and I will carry out the oath of office, and I will support the President of the United States as he directs me.

Senator SHELBY. Can you save NASA by downsizing and streamlining? Is that not the bottom line?

Mr. GOLDIN. I cannot do anything. The brilliant people at NASA will do it. I believe that NASA can really contribute to this country. Times have changed since we doubled the budget, as the chairman indicated, and there are a lot of new techniques in management and a lot of new technologies that we have to incorporate, and unfortunately, it means less people.

If we do not take these steps now, I am concerned that it could be more draconian later on, and we could make it through a year or two without downsizing, but a few years from now the American people will say, this is not good enough, and it could be really bad for everybody in the agency, and so I think we are doing the right thing.

### CUTTING-EDGE TECHNOLOGY

Senator SHELBY. But to keep the American people behind NASA we are going to have to have NASA stay on the cutting edge of technology, are we not?

Mr. GOLDIN. We must be a technologically, scientifically driven agency, and unless we are best in the world at what we do, at opening up the space frontier and understanding the impact of the human species on our own planet, and understanding how galaxies form, and seeing how people can live and work in space, No. 1, that is what we strive to be, and if we cannot deliver that we should not deserve to be funded.

Senator SHELBY. We have to be No. 1.

Mr. GOLDIN. We are No. 1.

Senator SHELBY. That is good. Thank you.

Thank you, Mr. Chairman.

### NASA PRIORITIES

Senator BURNS. Thank you, Senator Shelby.

Mr. Administrator, the administration has identified its five major priorities for NASA to be space station, mission to planet Earth, high performance computing and communications, advanced subsonic research, and the New Millennium Program.

I assume that you were a part of setting those priorities. What was the rationale used in setting those priorities?

Mr. GOLDIN. These were priorities set in trying to work this exercise in the next year's and the out-year's budgets. The administration had a specific set of goals and objectives that they felt were important, and they wanted to lay their priorities down to explain them. I do not believe it means the administration does not care for things like space science. I believe, and I think the administration believes, space science is crucial. It drives things that we do.

Unfortunately, when lists get generated, sometimes we only look at those lists, but one of the things I have tried to do as Administrator in working with the administration is to have a balanced program at NASA, and I think that is the key issue.

We strove to have the human space flight account, which was close to 50 percent, come down to about 39 percent, and our goal is to take it down to about one-third of the program. We have increased the amount of funding in science and technology by 13 percent at the same time, and cut our overhead account, and so I believe what this Administrator is trying to do in managing NASA, is to have balance in the program and not put too much in any one bucket, so that is the approach we are taking.

Senator BURNS. What concerns me that I think that Senator Mikulski and some of us who happen to believe in space science, we think whenever they set up those priorities, or I think, anyway, when they set up those priorities that those programs that are not mentioned on the priority list, they will suffer because there will be a shift in funding to the ones that are on the priority list.

Mr. GOLDIN. I intend to continue my communication with the administration, to continue to communicate on the subject of a balanced program. I believe as we work through the issues in the months ahead, I believe we will end up with a balanced program.

## MISSION TO PLANET EARTH

Senator BURNS. I want to commend your courage on mission to planet Earth after the hearing this morning, and I am a very big supporter of that. The New Millennium Program, give us a brief overview of that, because that is something that has crept into the mix in the last couple of years. Just give us a thumbnail definition of that mission and what it is supposed to do.

Mr. GOLDIN. Dr. Kennel and I met with the National Academy of Sciences, the Board of Sustainable Development, and they expressed concern that mission to planet Earth was not on the cutting edge of technology in certain areas, and they felt that we needed an evolutionary program where we would build the existing series of spacecraft based on technology today, but the next phase of spacecraft would need new technology, and on 5-year intervals we would launch spacecraft.

So at the recommendation of the National Academy, we set out on developing today leapfrog technology for the second phase of mission to planet Earth that will allow us to significantly cut the weight, cut the cost, and the mission development time for sensors that will have even greater performance.

As an example, the Landsat 7 spacecraft cost $750 million. We are building it today because the Nation needs it, and we are using existing technology. One of the programs we are going to have in the New Millennium Program in the mission to planet Earth is to see if we can develop a sensor that would cost tens of millions of dollars and do the same job as this very large spacecraft, and instead of having a separate spacecraft, incorporate it on a commercial platform.

So by investing on the order of $100 million, we think we could save this Nation hundreds of millions, in fact, a good fraction of $1 billion, and that is the intent of the New Millennium Program, to drive the technology, as Senator Shelby said, to make sure America is always No. 1 in advanced technology, and to use the taxpayers money on technology.

## X–34 PROGRAM

Senator BURNS. Then just give me a little bit of—what was the problem with the X–34, because the X–34 had to be a part of the new millennium.

Mr. GOLDIN. Well, it had the same concept, but the problem was we, NASA, made a mistake when we went out with the procurement. We wanted to get leading edge technology, and some companies told us, well, you can get leading edge technologies and make it commercial at the same time. I think that was an error in our procurement approach. No one was bad. We tried something new, and it did not work.

Now we went back out with a procurement which says, do not combine commercial with advanced technology development, we only want advanced technology development, and I believe we are going to get some very challenging proposals. So we, NASA, made a mistake. I will not apologize for it because we tried something new, we failed, we picked ourselves up, and we are going in a new direction.

Senator BURNS. You have still got money. You have still got money in that program.

Mr. GOLDIN. $62 million.

Senator BURNS. And I have a couple more. I will turn to the second round, to Senator Mikulski.

## BASIC SPACE SCIENCE

Senator MIKULSKI. Thank you, Mr. Chairman. I would like to pursue the space station and mission to planet Earth and space science as we look at this year's appropriation. Then, looking again to the following years, what do you see are the consequences of this budget proposal on basic space science?

Mr. GOLDIN. I believe we have made unbelievable progress in space science, and we have a paradox. In space science in our baseline budget, before we looked at any cuts, it was actually coming down from $2 billion, I believe, in 1996 to $1.7 billion in the year 2000, and in that time we were starting a whole variety of new programs.

The space science community has been really leading the charge for faster, better, cheaper at NASA, and they have been building new designs of spacecraft that allow us to do a lot more for a lot less, so this is one of the reasons I remain optimistic that it is not total dollars that determines what we do in space science, it is how clever we are with our New Millennium Program and how fast we make technological progress, and I have been asking the Members of Congress to judge us not by the dollars going in, but by the science coming out.

Let me give you an example. I went to the rendezvous of the *Galileo* spacecraft with Jupiter. At that ceremony, some people said, boy, this is the end of an era. It is the end of really good planetary science, because there are no more big science programs beyond Cassini.

And I said, you know, *Galileo* cost $1.9 billion and took 12 years to build. We now have started, since December 1993 when the applied physics laboratory at Johns Hopkins started the NEAR Program, nine new planetary programs. The sum total of those programs is $1.3 billion, and the last spacecraft will be launched 6 years after we started the first one.

Senator MIKULSKI. They actually returned money to you?

Mr. GOLDIN. They returned money, and they did not even ask for a nickel of reserves.

Senator MIKULSKI. Now, as we look at—those are wonderful, because in many ways the smaller scientific programs have the ability to be more agile and more entrepreneurial, but do you anticipate no new starts in space science? If you do anticipate new starts, what would they be? Do you anticipate cutting some of the scientific missions that are currently there, or where are we on that?

Mr. GOLDIN. Let me say that in the space science area our highest priority for a new start right now is SIRTF. This is a very crucial mission. It is the fourth of the great observatories—Hubble, Gamma Ray Observatory, AXAF, and SIRTF.

We have been performing the technological development to retire the risk in fiscal years 1995–97. We hope, when we understand the budget better, to be able to start that mission.

Another crucial mission that we have on the books is——

Senator MIKULSKI. When you say, when we understand the budget better, and this is not meant to be prickly, but when do you think we are going to understand the budget better? I mean, we are going to be marking up in 6 weeks.

Mr. GOLDIN. I tell you——

Senator MIKULSKI. I am not being curt here, but when are we going to know about the better, faster, and cheaper?

Mr. GOLDIN. There is not consensus between the administration and the Congress on the 7-year deficit reduction plan. I believe that that is the issue that has to be resolved before there will be any clarity under any conditions, that we will have understanding of what the out-year budgets are going to be.

It was not until 3 or 4 weeks ago that we got a fiscal year 1996 budget, and this is why I feel there has got to be some clearing of the air on that subject before we start taking draconian action. I am concerned that if we do have a resolution, and today we would start canceling programs, we will do this country a great disservice, and I want to hold the line and fight door to door, street to street, until we see what the clarity is in the out-year budgets.

### PRESIDENT'S BUDGET—IMPACT ON SPACE SCIENCE BUDGET

Senator MIKULSKI. Well, while we are achieving this clarity, do you feel the President's budget—what is the impact of the President's budget on space science?

Mr. GOLDIN. I believe that the President and the administration want to have a balanced space program, and they will work with us to get vibrancy in the program.

### PRESIDENT'S BUDGET—IMPACT ON NASA SPACE PROGRAM

Senator MIKULSKI. The President has proposed a budget. We are going to be debating it in the next couple of hours. Could we just talk about what is going to come to the floor in the NASA area?

Mr. GOLDIN. I believe the President wants a balanced space program.

Senator MIKULSKI. Is it in that budget we are going to be voting on?

Mr. GOLDIN. For 1997 the program is balanced, and in the out-years the administration has said they will work with us to try and assure vibrancy in the NASA space program in the years 1998–2001.

Senator MIKULSKI. In other words, we are going over the same ground, is that right, that we have gone over?

Mr. GOLDIN. I am committing to working and carrying out the President's program to assure a balanced budget.

Senator MIKULSKI. Mr. Goldin, we are now saying it like a mantra. What we are now concerned about is these out-years, so whether it is the President's budget or it is the Republican budget, we really have a big crunch in the out-years, and this is what you are saying we need to clear the air on, am I correct?

Mr. GOLDIN. Absolutely.

### ROLES AND MISSIONS OF NASA CENTERS

Senator MIKULSKI. So I think that is what we are trying to get to. Could we talk about the consequences on these centers like Marshall, Goddard, Wallops, and Ames in this budget? Do we anticipate RIF's? Do you anticipate shifts of activity to these centers?

Mr. GOLDIN. Under the zero-based review I think we have scrubbed the roles and missions of each of our centers. We are on a plan to take the NASA head count down from about 25,000 to roughly 17,000. We are about halfway there. We have a very orderly process, and so far we have been able to do it without a RIF. We believe we have the right mix. We are asking each of our people to double check and see, is this the right mix, do we have the right skills mix to do everything we are committed to doing. If there is a policy change, we will deal with it then, but right now we think we are on the right path to give this Nation the program that the policy calls for.

Senator MIKULSKI. Do you intend to keep Wallops Island open, or do you want to move it to Dryden, CA?

Senator BURNS. No; we are going to move Goddard to Montana. [Laughter.]

Senator MIKULSKI. And I am going to move Montana to Maryland. [Laughter.]

Senator BURNS. That would be a good move.

Mr. GOLDIN. Wallops Island is very crucial to NASA, in that it manages our suborbital flight program. It performs some very important operational activities for us. There is nothing on the books that says we should do without it. We believe we have the lowest cost, highest value out of the work force we have set up at Wallops under the zero-based review, and the direct answer is no, we do not intend to move Wallops to Dryden.

Senator MIKULSKI. I knew it was better to be here than on the floor. [Laughter.]

## PERSONNEL ISSUES

Mr. Goldin, just to come back to the personnel issues, in February 1996 you issued a discussion draft which was your guidance to your administrators. Have you finalized your guidance, or does this continue to be a draft—that is where you talk about how headquarters will determine the what and why. You want the headquarters to determine the what and why NASA should be doing, and the centers to be doing the hows, is that correct?

Mr. GOLDIN. That is correct.

Senator MIKULSKI. Have you finalized this discussion draft yet?

Mr. GOLDIN. I was overtaken by events. I am not going to rewrite the draft. I am relying on Mr. Christensen to work with each of the Associate Administrators. Let me elaborate a little more.

Senator MIKULSKI. I know we had a very difficult year. We also know we did not pass our appropriations, and so we understand, but what we are now looking at is, that you are going to be making decisions in July. I do not know if you are going to be making them off of a discussion draft or whether you are going to be making them off of something else that you have signed off on.

You talk about your strategic management handbook, due in the spring, that was going to determine strategic plan, enterprise plan, continuing improvement plan, the EEO plan, diversity management and so on. I just wonder if that is all done, and, therefore, there are written guidelines to everyone to be making these determinations.

Mr. GOLDIN. General Dailey has been working one on one with each of the Associate Administrators. He has been holding a series of meetings with them so that they fully understand the goals that we have. He has asked the Associate Administrators to work with each of their staffs and come back and propose to us what they think ought to be done to manage their area of NASA.

Senator MIKULSKI. You had to give them guidance. Is that the draft?

Mr. GOLDIN. That is the guidance.

## STRATEGIC MANAGEMENT HANDBOOK

Senator MIKULSKI. And then, has your strategic management handbook been completed that has the plans for doing this? It is referred to on page 5 of your discussion draft.

Because you say here, because of it, the relationships will be evident and consistent. The road map for the agency's future will be clear, and your role in accomplishing our goals will be obvious, and I think that is what we want.

Mr. GOLDIN. In mid-July, we believe we will be able to come up to the Hill and present to you a coherent plan that each of the Associate Administrators buys into. We will not move forward until we have an agreement with each Associate Administrator.

Senator MIKULSKI. But I asked you a question about your strategic management handbook.

Mr. GOLDIN. It is not done yet. The team is still working on it. They are a little late.

Senator MIKULSKI. And when will that be done?

Mr. GOLDIN. July.

Senator MIKULSKI. But was not that the handbook to give guidance on making personnel decisions?

Mr. CHRISTENSEN. It is a part of the guidance we are working on, yes.

Senator MIKULSKI. If that is not ready until July, how can you have your plan, and I am not being fussy.

Mr. GOLDIN. I understand what you are saying.

Senator MIKULSKI. In other words, you laid out guidance. You told them to get a handbook, and then you were going to make determinations on these centers.

Mr. GOLDIN. Everything is not done by formal memos between the Administrator and the Associate Administrators. If we conducted our business in this manner we would be inundated in paperwork.

Senator MIKULSKI. Mr. Goldin, these are your words. I am not making this up.

Mr. GOLDIN. And in the absence of——

Senator MIKULSKI. This is what you said you were going to do, sir. I am just asking you if it is done.

Mr. GOLDIN. The answer was no, and we are verbally communicating what the expectations are.

Senator MIKULSKI. Well, I tell you, I hope it is not botched up with the same miscommunication that occurred at headquarters, and I am just saying it out loud. All these verbal communications are great, fine. We are awaiting the big stuff in July, but this is what you said were going to be the written criteria, the goals, principles, and criteria about which decisions would be made.

Mr. GOLDIN. Senator Mikulski, if we were to conduct business on a formal basis between the Administrator and the Associate Administrators we would never get done. We gave them guidance. I spent a few hours with them talking about what my expectations were. General Dailey and the Chiefs of Staff of NASA have met one on one with each Administrator for a significant amount of time to make sure they understood what our expectations are.

Yes, the strategic management plan is not done, but I believe the Associate Administrators understand what they have to do, and if they do need further guidance, we will give them that guidance, but the commitment I am making to you is, we are not going to proceed forward until everyone clearly understands what they have to do.

They have their approach, their position, we discussed that position, and then we will proceed forward.

Senator MIKULSKI. My time is up.

Senator BURNS. Senator Shelby.

## IMPORTANCE OF THE MARSHALL SPACE FLIGHT CENTER

Senator SHELBY. Thank you, Mr. Chairman.

Mr. Goldin, we are talking about various centers and so forth, and components that make up NASA. How important is the Marshall Center to NASA?

Mr. GOLDIN. The Marshall Center has a number of very crucial management functions. They handle our information systems, they handle our communications systems, they are responsible for microgravity sciences, the management, and they perform specific work on biotechnology and materials in microgravity, but the most important mission that I see for Marshall is to lead this Nation from a position of lagging in propulsion and launch.

Senator SHELBY. For the last 25 years?

Mr. GOLDIN. Well, maybe the last 10 or 15, because the shuttle in its time was the best machine in the world, and it still is, but there are now engines that are beginning to overtake those engines.

I view their mission as turning around the declining technological strength of this Nation, and if you take a look at the budget, and going from 1996–97 there is only one budget inside of NASA that doubled, and that was the budget for access to space, which is managed by the NASA Marshall Space Flight Center. I hope they are going to be back to space flight, because that is what NASA is about.

This is very difficult for some of the employees down at Marshall, because we are asking them to change the focus of what they have been doing. We want them to lead the world and America to open the space frontier, and we have very high expectations.

## SPACE SCIENCE

Senator SHELBY. Thank you, Mr. Administrator.

Mr. Administrator, you said basically, and I will paraphrase you, most things in Washington are budget-driven. I do not say, however, that everything is. Judge NASA not by the amount of money they spend, but the amount of science coming out of the tunnel. Is that a fair statement?

Mr. GOLDIN. Yes, sir.

Senator SHELBY. I think that is an excellent statement, Mr. Goldin, and I also believe it is the proper criteria, because why do we have NASA otherwise? That is what drives NASA, and that is what will sustain NASA, what comes out, will it not?

Mr. GOLDIN. Yes, sir.

## MICROGRAVITY RESEARCH

Senator SHELBY. Along those lines, Senator Mikulski was talking about space science, and she mentioned microgravity research. That is the very, very cutting edge of space science, is it not?

Mr. GOLDIN. Yes.

Senator SHELBY. Microgravity research and materials, and so forth. Go ahead—you are the scientist. Go ahead and explain.

Mr. GOLDIN. I was just going to say, I received a letter from the head of the American Physical Society who just commended NASA on outstanding work in improving the quality of its microgravity research. This fellow was a Nobel Laureate, and I am very proud of our microgravity team, very proud.

Senator SHELBY. Are you pleased with the microgravity research that Marshall is heading up?

Mr. GOLDIN. Yes; I am, but as with everybody in NASA, I love their work, but I want them to be more efficient.

Senator SHELBY. And you want them to do better.

Mr. GOLDIN. Yes, sir.

Senator SHELBY. And discover more things that we will all benefit from.

Mr. GOLDIN. For less money.

Senator SHELBY. That is fair.

Mr. Chairman, that is all the questions I have.

### GRAVITY PROBE B

Senator BURNS. Mr. Goldin, the budget request allocates $59.6 million to gravity probe B, a program that seeks to fly gyroscopes into space to test Einstein's theory of relativity. Notwithstanding last year's Academy of Sciences report, which recommended—they do recommend continued funding. It is well known that the scientific community, though, is divided on the merit of the project, and even NASA has expressed some concerns about it in the past, given the ambivalence right now toward that program.

Do you think we should start to consider to redirect those funds to other programs, or to a new program?

Mr. GOLDIN. I went to the National Academy of Science and I said I had received a number of letters for and against gravity probe B. I said, I am the NASA Administrator. This is not a field of my expertise, nor do I feel that NASA internally ought to make this decision.

I asked them to convene a panel of the very best people in science and technology with an understanding of that field. The National Research Council set up a committee and they gave us a recommendation. I asked them to give us a very clear recommendation to let us know, is this worthy.

The recommendation, as I interpret it, says we ought to proceed with this program. I do not know how to take multiple votes by talking to people all over the country and say, well, raise your hand, should we do it or should we not?

I go to the National Academy of Sciences and the National Research Council. Given the position that they have taken, I believe we have to proceed forward with this program, and we intend to fund it.

Senator BURNS. With the discussion that you have had with the ranking member of this committee, I am going to ask unanimous consent that the discussion draft be made a part of the record and that the communications be opened up as far as how we are going to proceed on the restructuring, which is a nice word for if we are going to have cutbacks in any areas, and to give us some sort of a framework and guide on how we are going to do it, knowing that this is a request of the administration and how they want to do business.

Senator BURNS. I have no other questions for the Administrator.

### MISSION TO PLANET EARTH

Senator MIKULSKI. Mr. Chairman, I just have a few things about mission to planet Earth. First, thank you for putting it in the record, and I would just say to my colleagues that I think Senator Bond and I are concerned about the shorttime line we have to complete our business within this subcommittee.

We are debating the budget. We look forward to getting our 602(b). We have many compelling needs within that, the House has to act, and so we need whatever NASA's decisions or framework is going to be as early as possible, because I would anticipate we would be heading to the Senate floor by mid-July. We will be adjourning October 4. We certainly do not want to get into these—we had 13 continuing resolutions, and you know the erosion that that had on morale.

Mr. GOLDIN. I was furloughed at home. [Laughter.]

Senator MIKULSKI. I understand you had a very good authorizing hearing today on the space program and mission to planet Earth, is that not correct?

Mr. GOLDIN. Yes.

Senator MIKULSKI. And Mr. Goldin, as we look at the phrase, mission to planet Earth, it is both not only the platforms that were originally thought of, but am I right in saying that mission to planet Earth is not only a series of platforms but also a description of how you intend to use the new millennium and some of the small satellites, like the synthetic aperture radar technology, to spot icebergs and oil spills and all of those things, but essentially it is a continuum of smaller craft that you can do quicker and faster where, if the technology accelerates the way Senator Shelby has talked about it, you can pull one back and be moving another one in. Am I right?

Mr. GOLDIN. You are absolutely correct and, in fact, again I will refer to a discussion I had at the National Academy.

A number of members of the National Academy commended NASA for undertaking the new millennium and Earth system science pathfinder, saying they felt that this would bring revolutionary technology, because we are going out to the scientific community and asking for the very best minds and the very best ideas having flexibility to enhance these basic 24 measurements.

So it is the sum total of the 24 measurements plus all the new advancements, plus the cooperative work we are doing with countries around the world. I know you are a major proponent of this, because if we are to begin to have sustainable development and have discussions at the political level, country to country, we have to involve other countries in collecting and analyzing the data, so it is the sum total of technology, and international cooperation, and the basic 24 measurements.

Senator MIKULSKI. And that then goes to why I have been asking the questions on both this year's budget and then the following years. I believe as we do our own work and then go to the world to join with us on these endeavors. We have to be very clear on what the United States commitment is going to be, and that our commitment has to be as sustainable as the sustainable development is.

In other words, whatever we do, we have to really start thinking, I think, in multiyear budgets that are reliable to both you, to the contracting community, and to our international partners, and that is really what I want to be able to accomplish in whatever way we are going to do it, and if communication gets bogged down with someone in the administration, then I think we need to have the kind of space summit that President Bush called when he got us all together under Vice President Quayle's leadership to discuss the space station—out of that came such a significant coalition.

Senator Burns, you were not here—Senator Shelby—but House, Senate, Republican, Democrat, sat down and we really mapped out what we were going to do on the space station. That coalition has held, and we would like to be able to look at it in terms of the budget as well, and I am not saying you have to do that, but we need to come to clarity, and if the clarity bogs down at the staff level, then I think we need to move forward and have a conversation and work on the basis of national interest, not a particular party interest.

Mr. GOLDIN. I could not agree more. I think this NASA team, the people sitting here in the room and the people at our centers and all over the country and the contractors have done an unbelievable job under very difficult circumstances.

For 1 year I would like to be able to go back and tell them, we know exactly where we are going, there is a commitment, and we are going to move forward, and we are prepared to work with you, the President, the Republicans, and Democrats.

Senator MIKULSKI. Why do we not say this. If there is still a lack of clarity by June 15 or thereabouts, then I would invite my colleagues to join with me on a bipartisan basis to ask for a space summit meeting with the President and the leadership to clarify this, of both parties.

Mr. GOLDIN. We will be supportive.

Senator BURNS. I think it is an awfully good idea. As most of you know, I am a natural resource kind of a person. I was reminded—we were up in Alaska this last weekend, and, of course, every time I go to my home State of Montana, and then the hearing yesterday, or this morning, sort of bolsters what we should be doing with space, and I was reminded that we are producing naturally the same amount of fresh water in this world as we were 2,000 years ago. That has not changed.

The population of the world has increased, and the distribution of people across the face of the Earth, this little piece of mud that we are whipping through space on continues, and I think we have to know more about our planet, and that is the reason mission to planet Earth was so good, what it tells us about how we produce, about how we feed and clothe our people, how we plan our cities.

All of this is going to be—this is a very, very important mission for this country. It is also an important mission on how we tell other countries or advise other countries on how to manage their resources also, and we looked at this stuff that yes, maybe some of us who live in an area already know.

Well, we know it because we got a little bit of dirt under our fingernails from it, but to go to explain and to go to the public with scientific information and then boil it down to a layman's language, to where they can see it, then we can tell this country where it is with respect to the management of our natural resources in this country and, of course, around the world, and I think that is what this basically is all about.

It is bigger than partisan politics. It is bigger than anyone, Senator. It is something that future generations will depend upon.

## SUBMITTED QUESTIONS

I have no more questions. I am going to leave the record open. If other members of this committee or Appropriations have questions they can direct them to you, and if you could respond to the individual Senators and to this committee, that would be helpful to us.

Are there any further statements?

Mr. GOLDIN. Senator Burns, I would like to address a statement to Senator Mikulski.

Senator Mikulski, I believe that I owe you a written document. I have thought about it, and you will have a written document on your desk in 2 weeks.

Senator MIKULSKI. OK, and we only look for something that is specific, immediate, and realizable. Thank you very much.

[The following questions were not asked at the hearing, but were submitted to the administration for response subsequent to the hearing:]

### QUESTIONS SUBMITTED BY SENATOR CONRAD BURNS

*Question.* The Administration has identified its five major priorities at NASA to be: Space Station, Mission to Planet Earth, High Performance Computing and Communications, Advanced Subsonic Research, and the New Millennium program. What was the Administration's rationale for choosing these five programs?

Should the subcommittee interpret the list of priorities to mean that, to the extent cuts are required, they should be taken from other NASA programs?

Answer. The Administration has highlighted a number of Science and Technology investments in its fiscal year 1997 budget supplemental material chapter entitled "Promoting Science and technology", including NASA programs such as the Space Station, Mission to Planet Earth, New Millennium Initiative, Reusable Launch Vehicle, High Performance Computing and Aeronautics Initiative. These are all high-profile programs which support the Administration's commitment to economic prosperity, education, health and the environment:

—The Space Station is our first step toward permanent human habitation of space, and will enable us to do long-term life science, microgravity science, materials development and engineering technology work in a first-class laboratory specifically designed for such work.

—Mission to Planet Earth will provide the long-term, broad-spectrum, global data, to allow the first real understanding of how our home planet works, and how we affect the planet.

—The New Millennium Initiative, as defined by the Administration, includes several relatively small space and Earth science programs. These include the space science Explorer, Discovery, Mars Surveyor and Deep Space technology missions, as well as the Earth System Science Pathfinders and Earth Orbiting technology missions. These "better, faster, cheaper" missions utilize innovative management and advanced technology to enable a substantial increase in the number and scope of our science programs within the tightly constrained budgets forecast over the next decade. Without them, we would not achieve the high priority objectives of the science community.

—The Reusable Launch Vehicle program will demonstrate the technologies to enable an order of magnitude reduction in the cost of access to space. Reducing the cost of getting to space is a fundamental requirement if we really wish to open this new frontier and gain all of the scientific and economic promise that it offers.

—The High Performance Computing program is part of a government-wide effort to enable continuing advancements in our Nation's computing capabilities. The improvement in our computing capabilities is critical, not just to allow NASA to achieve its science and technology objectives within constrained budgets, but to maintain the viability of our economy.

—The Aeronautics Initiative, which includes the High-Speed Research and Advanced Subsonic Technology programs, will enable revolutionary advances in the next generation of high speed and subsonic aircraft, and will allow the U.S. to maintain its global preeminence in aeronautics.

Although the Administration has highlighted these programs, this highlighting was not intended as a guideline for budget reductions, and the Administration supports full funding of the NASA request.

*Question.* NASA's budget request supports the X–34 program, which is aimed at developing a subscale vehicle to test new technologies, but earlier this year, Rockwell and Orbital Sciences pulled out of the program. How much in the fiscal year

1997 budget is allocated to the X–34 program and, given the collapse of the program, does it not make sense to reprogram the X–34 money to other NASA priorities, or perhaps apply it to cost savings?

Answer. Fiscal year 1997 funding requested for the X–34 program is $15 million. NASA's attempt to combine a research vehicle with a commercially viable space launch system proved too ambitious; however, the agency still has a requirement for a hypersonic reusable launch technology test bed with first flight in the 1998 time frame. The X–34 will provide early data on reusable launch vehicle technologies and operations and, over the longer term, the X–34 will provide a lower cost, lower risk vehicle on which to test advanced technologies before they are installed on other, more expensive, vehicles such as the X–33 or an operational RLV. The X–34 remains a high priority of the RLV program despite the fact that our industry partners withdrew from the co-funded cooperative agreement when they concluded that the commercial return on their investment was insufficient.

*Question.* Many believe considerable out-year cost savings are possible by privatizing the Shuttle and, to its credit, NASA has already taken the interim step of placing Shuttle operations under one prime contractor. Has NASA started to develop, in consultation with the launch and insurance industries, some possible scenarios for a viable privatized Shuttle program? What are the main legal and policy issues that must be resolved before implementing a privatization plan and what progress has NASA made towards addressing those issues?

Answer. NASA's planning for Shuttle privatization is to not preclude any opportunities. As stated we are moving toward a single prime contractor for the Space Flight Operations Contract (SFOC) and we view this as the next step in the privatization continuum.

Because we must continue to fly at least seven flights safely per year and operate an on-going program, we have planned this transition to be carefully phased. We will proceed when we fully understand the implications of privatization and when the contractor has demonstrated ability to manage the complexity and intricacies of Shuttle operations successfully. We do not foresee the possibility of privatization until after the International Space Station (ISS) assembly is complete (2002).

We have directed the SFOC contractor to submit their privatization plans, including identification of issues, one year after contract authority to proceed (about October 1997). Concurrently, NASA is attempting to understand privatization issues such as flying commercial payloads, continuing of indemnification's, contractor profit and investment incentives, marketing of business opportunities vs. manifesting, the government's role and responsibility, and foreign government involvement. We are in the initial stages of this assessment.

Private industry must also determine the commercial viability of assuming complete responsibility of the national resources which comprise the Shuttle program. Launch pads and associated facilities, mission control; astronaut training, including aircraft; propulsion test facilities and barges, etc. This is in addition to the Shuttle vehicle components.

At this time, NASA does not envision any out-year savings associated with consolidation of operations under a single prime beyond what our fiscal year 1997 budget request has already assumed, and it is premature to estimate any savings associated with privatization beyond 2002. Consolidation and privatization may facilitate future reductions, but to what extent is unknown.

*Question.* We here commend NASA's courage and leadership in resisting calls for extreme budget cuts in Mission to Planet Earth. How would a 27 percent reduction from the fiscal year 1997 budget request for Mission to Planet Earth affect its ability to carry out its core goals and missions?

Answer. NASA is committed to protecting the critical science activities underway, as well as operation of existing spacecraft and completion of those nearing launch. That means that reductions must be taken out of the subset of funding being used for future missions, new technology, purchasing data, or developing the data system; these are specifically the areas in which the program was attempting to address recent recommendations from the National Academy of Sciences. The effects of such a reduction would be severe, regardless of whether the reduction lasted for only one year or lowered the entire program baseline funding level for the out-years. If out-year reductions were sustained, fundamental elements of the program would be irreversibly damaged. Unfortunately, it is not likely that a cut of this magnitude could be fully restored in subsequent years. Short term cost savings gained by stretching the program out (without actually eliminating important content) will certainly cause an increase in out-year costs.

*Question.* The budget request allocates $59.6 million to Gravity Probe B (GPB), a program which seeks to fly gyroscopes in space to test Einstein's theory of relativity. Notwithstanding last year's National Academy of Sciences report which recommended continued funding, it is well known that the scientific community is divided on the merit of this project and even NASA has expressed concerns about it in the past. Given the ambivalence towards GPB, should serious attention be given to redirecting this funding to higher priorities at NASA?

Answer. Funding for Gravity Probe B (GP–B) has been identified and continues to be considered as a high priority for support both within the Agency and by the science community. Development for GP–B is now more than two-thirds completed, and the mission remains ahead of schedule for its planned October 2000 launch date

*Question.* Last year, NASA made six awards under the EPSCoR program. Three year, $500,000 annual awards were made to Alabama, Arkansas, Kentucky, Louisiana, Montana, and Puerto Rico. What is the status of these awards?

Answer. These six states currently are beginning their third year of funding. We are conducting an evaluation of these six states this summer, to determine which will be renewed for an additional two years, as outlined in the program announcement.

*Question.* After six awards were made, there was still approximately $2 million remaining of the amount appropriated for EPSCoR. How did you use this $2 million? Please be specific.

Answer. Twelve EPSCoR proposers not selected for the initial NASA EPSCoR award were given various amounts to support either specific research projects or students through fellowships. This was done to assist these states in becoming more competitive in future NASA EPSCoR announcements of opportunity. Twelve states thus received awards ranging from $50,000 to $150,000. These states include: Connecticut, Kansas, Maine, Mississippi, Nebraska, Nevada, North Dakota, Oklahoma, South Carolina, Vermont, West Virginia, and Wyoming.

*Question.* You have held a second competition for awards under EPSCoR. How many proposals do you expect to fund and when do you expect to announce the awards?

Answer. We are conducting a review process this summer, with awardees to be announced no later than October 1, 1996. We plan on funding up to four new proposals.

*Question.* Please explain how you expect to spend the funds requested for EPSCoR in the fiscal year 1997 budget.

Answer. EPSCoR funds budgeted for fiscal year 1997 will be used to continue funding the new awardees that will be selected by October 1, 1996 and to fund renewals for up to six first-round awardees. We are currently conducting an evaluation process for the six current EPSCoR states, to determine if they should be renewed for an additional two years, as outlined in the program announcement.

*Question.* A major purpose of the EPSCoR program is to develop research capabilities throughout the country which are capable of participating in research and contract activities of the various NASA facilities and programs. How are you using EPSCoR to help our institutions become more significant participants in NASA activities in general?

Answer. EPSCoR proposals undergo a rigorous review by NASA scientists and engineers at Headquarters and the various Field Centers. The quality of NASA-related science and technology being proposed is a primary factor in the selection process. While EPSCoR is a research program, principal investigators are encouraged to explore other NASA programs to enhance their linkages with NASA. EPSCoR principal investigators are, in fact, the state Space Grant program director. It is NASA's intent to encourage synergy among these and other NASA/university programs, such as the NASA/University Joint Venture (JOVE) program and the NASA/ASEE Summer Faculty Fellowship Program, so that all NASA grantees are aware, and take full advantage of, NASA resources. EPSCoR researchers are strongly encouraged to establish relationships with researchers at NASA facilities, and to reflect this in their proposals; in fact, the EPSCoR funding mechanism is a cooperative agreement between the grantee and one or more NASA Field Centers. When the grantees are evaluated at the end of three years, a key factor in assessing progress is the number of proposals funded by NASA and other agencies.

*Question.* You are holding a joint Space Grant/EPSCoR/JOVE Conference next week. How do you see these programs relating to each other in the future?

Answer. The 4th National Space Grant Conference was held with the 1st National EPSCoR Conference, and overlapped with the yearly JOVE meeting. These programs address the enhancement of agency-university research and research capabilities. Whereas Space Grant is a comprehensive program, with goals in education and public service, as well as research, the EPSCoR and JOVE programs are almost entirely directed to research enhancement. The focus of EPSCoR is institutional and state research capability enhancement, while the focus of JOVE is primarily individual researcher capability enhancement.

Space Grant encompasses nearly 400 institutions of higher education; many of the programs are managed at research-intensive universities. EPSCoR and JOVE programs, on the other hand, target states and institutions which have received but modest NASA R&D support. The goal of the Education Division is to insure a seamless interface between these similar programs, so that networking, reporting, and evaluation are all part of a larger, more effective whole. This objective was furthered measurably at this first joint meeting.

*Question.* How much have you requested for the RTTC program in fiscal year 1997 and what do you see as the future for this program?

Answer. The RTTC activities are integrated into the total fabric of the NASA Commercial Development Technology Transfer program and their budget is not requested separately. Nevertheless, within the total fiscal year 1997 program request of 33.6 million, we expect to allocate approximately $6.6 million to the RTTC activities (not including funds to support state affiliate offices). Given full funding of the President's budget requests, we expect the RTTC network to continue to be an integral part of our program and to serve as a major path of connection with and communication to the public and local and regional business communities across the Nation.

*Question.* NASA education activities have been about level for several years, yet much of the money is committed to on-going programs. What are the opportunities for new initiatives?

Answer. NASA has not included plans for new initiatives in education in its budget request. The reality of a flat or declining budget precludes major new initiatives at this time.

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## QUESTIONS SUBMITTED BY SENATOR BEN NIGHTHORSE CAMPBELL

*Question.* In NASA's fiscal year 1997 budget request, under US/Russian Cooperative Program, the Mir/Space Shuttle program is outlined. I know we have been having difficulties with the Russians and making sure the project stays on track. Can you comment on the current situation of the program and what NASA is doing to try and ensure the program continues on its timeline?

Answer. While no major difficulties have arisen during implementation of the Phase 1 Mir program, there have been concerns regarding Russia's ability to deliver critical hardware for the assembly of the International Space Station, beginning in November 1997.

Since the Joint Commission on Economic and Technological Cooperation (GCC) between Minister Chernomyrdin and Vice President Gore in January 1996, significant progress has been made relative to mutual agreements and understanding between the two countries. The U.S. and Russian Governments have agreed upon a set of milestones for the critical early elements, which have been documented and will be statused to the GCC. This report will focus on the progress on such critical early elements as the Russian-provided service module, the Russian-built FGB module, and the first U.S.-provided node.

In order to independently monitor Russia's progress, NASA has developed extensive contacts with the Russian Space Agency and Russian industry at the U.S. Embassy in Moscow as well as at program offices in Houston and Washington. In addition, NASA has personnel on-site at both RSC-Energia and Khrunichev. These on-site representatives are regularly briefed on the status of the FGB and Service Module and view the hardware as it is being produced.

RSA has received funding for work on its space station elements, and recently signed new contacts with Khrunichev and Energia for their contributions. Production of the service module has fallen behind, but Russia believes the schedule can be recovered. Mr. Trafton, Associate Administrator for Space Flight, traveled to Russia the week of June 10, 1996, to status Russian progress and his observations will be included in the first report to Vice President Gore and Minister Chernomyrdin.

*Question.* Does the Missiles and Space Division in Huntsville interact or cooperate with any components of the Ballistic Missile Defense Organization? If so, please comment.

Answer. No, the Missiles and Space Division in Huntsville does not interact or cooperate with any components of the Ballistic Missile Defense Organization.

*Question.* What is the agency doing to continue and maintain its strong relationships to university research both at the undergraduate and graduate levels?

Answer. A concerted effort to continue and improve agency-university research relations is being made by the NASA Education Division, Office of Human Resources and Education, and the NASA Office of Equal Opportunity, through programs such as the Space Grant College and Fellowship Program (Space Grant), Experimental

Program to Stimulate Competitive Research (EPSCoR), NASA/University Joint Ventures (JOVE), Graduate Student Researchers Program (GSRP), Summer Faculty Fellowship (SFFP/ASEE) Program, and the Minority University and Research Education Division programs.

Space Grant, for example, awards about 1,500 research-based fellowships; awards for undergraduates are stressed. About 22 percent of these fellowships go to members of underrepresented groups and 39 percent to women. The GSRP provides support for approximately 400 students in NASA-related research areas at more than 100 universities around the country. More than 50 percent of these students spend time at NASA centers, using our facilities and developing research connections with NASA scientists and engineers.

NASA's overall support to institutions of higher education in fiscal year 1995 was $818.4 million. This represents more than 5,500 active grants, cooperative agreements, and contracts to these institutions.

Scientific Research remains one of the Agency's highest priorities. The fiscal year 1997 budget requests over $3.75 billion (or over 25 percent of the total NASA fiscal year 1997 request) for scientific research programs including space science, life and microgravity sciences and applications, and mission to planet earth.

NASA continues to accomplish its research mission through its collaborations with university researchers, which include student researchers at both the undergraduate and graduate levels. The fiscal year 1997 request contains over $100 million for academic programs including university and education programs. Additionally, major R&D funding flows directly from NASA's major program offices to universities for research. In the last completed fiscal year the Office of Space Science provided more than $320 million for university research.

We have also invited U.S. universities to help us redefine our working relationships and explore new partnering opportunities, as NASA seeks to rely more on universities and industry to help its mission in the years ahead.

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## QUESTIONS SUBMITTED BY SENATOR BARBARA A. MIKULSKI

### MTPE/EOS

*Question.* The fiscal year 1996 budget and proposed fiscal year 1997 support the Office of Space Science's progress on its strategic plan, including the initiation of SOFIA, SIRTF and TIMED programs. How will it be possible to carry out these programs given the sharp declines in the Administration's Office of Space Science budget plans for fiscal year 1998 and beyond?

Answer. The President's 1997 budget request contains sufficient funding for the highest priority initiatives identified in the OSS Strategic Plan published last year. We intend to pursue these programs in order to accomplish the goals defined by the science community and the National Academy of Science. We are seeking to accommodate in the out-years due to two major factors: the Cassini and AXAF programs have passed their peak funding years (they will be launched in 1997 and 1998 respectively) so the large funding wedge which was required to fund them is no longer needed; and the Space Science program has restructured almost every mission and continues to reduce mission costs. SOFIA, SIRTF, and TIMED, can move forward if we receive the funding levels requested in the President's fiscal year 1997 budget.

*Question.* I understand that the insurance industry, which suffered significant losses from major disasters like Hurricane Andrew or the 1993 Midwest floods, is beginning to look at how they might consider using EOS to help them improve our ability to better predict severe weather events like hurricanes, floods, and droughts. What applications does EOS have to improving disaster management? Do you think it would be helpful to engage James Lee Witt at FEMA in reviewing EOS's utility in improving disaster management?

Answer. NASA and its interagency, international, and commercial partners are striving to discover patterns in climate that will allow us to predict and perhaps respond to environmental events—such as floods and severe winters—well in advance of their occurrence. Nations, regions, and individuals can then use this knowledge to prepare for these events, likely saving countless lives and resources.

Our current lack of understanding affects the nations of the world in different ways. African nations are often concerned with severe droughts, while those in Southeast Asia want to know with more precision when a monsoon will arrive. The U.S. is concerned with the likelihood of floods along the Mississippi, rainfall patterns over agricultural areas, and damaging storms along our heavily populated coastlines.

Concerns about the Earth are now reaching beyond the scientific community to the business world. The trillion dollar banking and insurance industries around the globe are beginning to see the value of Earth observation in such areas as long term climate prediction, severe storm forecasting, and sea level rise. Such businesses have been predicated on a stable world climate and their well being is dependent on good intelligence about the future of the Earth's environment. Since the entire Earth is affected by climate changes, Mission to Planet Earth is an international program which will enable regional forecasts to identify potential trouble spots around the globe in the future.

To address these and other fundamental science questions, Mission to Planet Earth has developed a Science Research Plan, which outlines our science priorities for the next four years. Priorities include natural hazards research and seasonal to interannual climate forecasting, each of which could contribute significantly to our understanding of hurricanes, floods, and droughts. The research in this area would contribute enormously not only to our ability to predict the occurrence of such events, but also to assessing damage from such events and offering insight on preparations for dealing with natural disasters. Beyond the obvious scientific benefit of researching these phenomena, we are confident that agencies like FEMA will be able to use this information to help them manage the preparation for and response to natural disasters. NASA intends to enhance its dialogue with FEMA in the months ahead to discuss areas of mutual benefit and discuss the possibility of a regional interagency conference on natural disasters to develop constructive steps for interagency cooperation. NASA already works closely with FEMA during disasters, and we look forward to enhancing that relationship.

*Question.* What is NASA doing to build partnerships with industries like insurance, agribusiness, forest and paper, and fishing, which might benefit from EOS data?

Answer. NASA is moving ahead to forge new partnerships which will expand the uses of Mission to Planet Earth's data while preserving our science goals. These partnerships are the basis for a variety of mechanisms we will engage in to ensure that the benefits of our program reach out to all Americans.

One such vehicle for involving commercial partners in Mission to Planet Earth is our draft Commercial Strategy, which is designed to drive down the cost of science data by exploiting cutting-edge industry technologies and information systems and by working with the commercial sector to develop new technologies which are mutually beneficial to government and business.

NASA will engage in partnerships with the private sector to encourage a thriving new industry which transforms data into practical applications which can be useful in the lives of everyday Americans and their businesses in areas such as agriculture, forestry, fishing, and mineral extraction. We have several efforts planned.

First, NASA is in the process of evolving our system for gathering, distributing, and storing Earth Science data, the Earth Observing System Data and Information System (EOSDIS), through an affiliation of environmental information and related service providers (and their users) referred to as Earth Science Information Partners (ESIP's). ESIP's come in three classifications: ESIP #3's are concerned with extending the applications and benefits of MTPE data and information beyond global change research to the broader user community. For example, ESIP #3's offer an opportunity for NASA, other federal agencies, and the commercial community to jointly assess MTPE science data for applicability to the overall agricultural user community's requirements for remotely sensed spatial data through an agency Cooperative Agreement.

NASA's support of the ESIP #3 initiative is designed to encourage the emergence and strengthening of the environmental information economy. Potential application areas of interest include: agriculture, forestry, land monitoring, land use and urban planning, atmospheric, oceanic, transportation, water resources management, vector-borne disease monitoring, environmental hazards monitoring, mineral exploration, marine and ocean applications and other areas relating to the use of spatial data.

NASA's approach consists of establishing partnerships with other Federal agencies, state and local governments, universities, non-governmental organizations, non-profit organizations, and private companies. These partnerships may result in new value-added providers in addition to established value-added companies. Central to the function of the ESIP #3's is the function of transforming the MTPE science products into market driven applications products designed to meet the needs of a particular group of users.

NASA plans to release a Cooperative Agreement Notice (CAN) for the prototype ESIP #3's this fall, with the intention of funding 5 to 15 ESIP #3 proposals. These activities would be funded for periods of up to five years to allow user acceptance and market development to build to self-sustaining levels. Through joint industry-government funding, these commercial ventures would be self-sustaining at the end of five years and not require continued NASA funding even if the joint endeavor agreement continues. Though NASA funding will not extend to other government agencies to fulfill their legislatively mandated requirements, it will fund joint activities aimed at the development of a working relationship with NASA with cooperating agencies.

Second, NASA plans to release a Cooperative Agreement Notice (CAN) on the "Application of MTPE Science Results to Agriculture and Related User Communities," as an integral part of Mission to Planet Earth's draft Commercial Strategy. The CAN is designed to develop a partnership among the federal government, university scientists, private value-added companies and the agricultural community to assess the opportunities for practical applications of Mission to Planet Earth data to agricultural concerns.

Specifically, this CAN will seek to:

(a) Translate science results into applications with direct relevance to the agricultural community;

(b) Assess the utility of future MTPE data products for agricultural uses;

(c) Investigate improved information delivery mechanisms; and

(d) Assist in the identification of requirements for advanced sensor systems and data products in the area of agriculture.

The CAN concept develops government partnerships with the agricultural community, universities, and the commercial sector. Preliminary discussions on the CAN have begun and initial projects will be funded for 3 years.

Third, we will be holding a workshop at the University of California at Davis this fall to discuss how NASA, other agencies, universities, and the agriculture community can work together for mutual benefit.

Fourth, to further facilitate the translation of science into practical benefits, NASA plans to initiate a series of regional conferences with other federal agencies and the commercial community. These conferences will focus on specific issues such as farming, fishing, and natural disasters, and will consider innovative means for federal agencies and the private sector to work together to solve complementary problems. We hope to kick-off a new era of government-industry cooperation where we share expertise for mutual benefit.

NASA believes that these efforts and others will help to both broaden the level of awareness of how the data might be used and the base of people capable of, and interested in, broadening these applications.

Finally, Mission to Planet Earth has $50 million in its fiscal year 1997 budget to purchase research data from industry; last month we released a Request for Information (RFI) to determine how the commercial sector could work with NASA to provide the scientific data we need.

*Question.* I understand that NASA has already provided some initial funding for a project that focuses on agricultural uses, the Upper Midwest Aerospace Consortium, which utilizes the resources and experiences of agricultural universities in the Great Plains (North and South Dakota, Wyoming and Idaho). More specifically, what is NASA doing to enhance agricultural applications to Mission to Planet Earth data? Would you say that NASA and its Mission to Planet Earth program have benefited from this experience of working with a consortium of institutions such as the ones involved in the UMAC? If so, can you speak to these benefits?

Answer. Mission to Planet Earth will focus on the scientific understanding needed to improve long term weather prediction, greatly benefiting both our daily lives and long-range planning. When reliable long term weather forecasts are available, farmers will be able to use this information to better manage what has been the greatest risk factor in their business: the uncertainty of climate patterns. Losses of crops and livestock previously caused by shifts in seasonal weather patterns or by adverse weather conditions will be reduced by altering crop/livestock selection, exploring innovative farming techniques, or perhaps not planting certain crops during a particular season. Market forces might allow farmers in regions not under threat to increase their productive capabilities to prevent shortages. We can see the potential benefits of such improvements in knowledge just around the corner; the key is pursuing the planned measurements as soon as possible.

Capitalizing on these improvements in knowledge is the Upper Midwest Aerospace Consortium (UMAC), which is a distribution information system, based on electronic co-location, between the Universities of Idaho, Montana, Montana State, North Dakota, North Dakota State, South Dakota State, South Dakota School of Mines and Technology, Wyoming, and the EROS Data Center. US West is contributing the telecommunications links for this electronic network. The Consortium has four primal objectives:

(1) Technology transfer of research results immediately into the public sector;

(2) Improve public knowledge and use of space-based data to enhance the region's natural resource-based economies;

(3) Utilize the full capability of EOS satellites and remote sensors; and

(4) Engage the creativity of new users.

The UMAC seeks to accomplish these objectives within each local area through a Public Access Resource Center (PARC), sponsored by UMAC. The purpose of the PARC would be to translate NASA's Mission to Planet Earth science research results and data into information products of specific relevancy to different user communities, such as agribusiness. The PARC would also create a multiplier effect necessary to ensure greater use of the data, and distribute value-added products to a broader user group; this is particularly valuable in conjunction with the Global Positioning System (GPS) used in "precision agriculture."

Based on the results of the project definition phase, NASA plans to fund UMAC for another year to develop and test prototype products for the agriculture community through such a PARC. Such prototype remote sensing products could enable: early predictions of crop conditions and yields for establishing crop prices; earlier and more detailed information concerning crop harvesting times and locations for improved planning of transportation, improved response of the insurance industry to crop damage by inclement weather; better informed farmers for improved decision making process concerning the shipping and selling of crops; and improved information on the distribution by crop types within a region. UMAC will be encouraged to apply this fall to the open solicitation for prototype extensions (i.e., ESIP #3's) described in question 3; selections for this solicitation are expected in late spring of 1997.

Though NASA's relationship with UMAC has just begun, we believe that innovative partnerships between industry, government, and universities hold great promise. These partnerships should lead to direct benefit for the agricultural community.

In addition to UMAC, Mission to Planet Earth is encouraging agriculture applications through several other promising ways. For example, through a prototype extension of our data and information system, EOSDIS, we will reach out to the commercial community to apply our science data to the needs of the agricultural community and many other practical areas. We will also release a Cooperative Agreement Notice (CAN) specifically designed to translate science data into agricultural uses. In addition, we will hold an agricultural workshop at the University of California at Davis to determine how government, universities, and the agricultural community can work together for mutual benefit.

Finally we are planing a series of regional conferences involving partnerships with other federal agencies, universities, and the commercial sector—each conference will focus on one key area of mutual interest such as agriculture. Though our budget is constrained for all the activities mentioned here, we are already beginning to yield some exciting results and we have confidence that these partnerships will help move the agricultural community into the twenty-first century.

*Question.* Some suggest that the PM–1 spacecraft and the CHEM–1 spacecraft could be completed using either existing DOD sensors or commercial satellites, and therefore we can eliminate funding for them now. Could defense assets take the place of these two missions, or is this suggestion being used simply as a cover to cut EOS's budget?

Answer. In each of our EOS restructuring activities, NASA has always kept schedule as one of our highest priorities. With strong support from the national and international scientific community, NASA has focused the objectives of the EOS program on global climate change by addressing the most urgent scientific problems. Establishing scientific priorities for EOS has helped NASA in dealing with past budget reductions, but dramatically slipping the PM and CHEM schedules would be irresponsible. Delays of this magnitude would damage the globally consistent and well-calibrated observations now planned as part of EOS. The delays proposed could also fundamentally alter the international relationships on which the program is based. Four of the ten instruments on these two missions are provided by our international partners.

DOD and NASA share a rich background of cooperation, and we are always exploring new ways to expand this partnership, particularly in MTPE. However, NASA's planning for MTPE and its budget already assume substantial program savings from cooperation with DOD and national security agencies, and use of technology developed for national security purposes.

We are aggressively pursuing the use of DOD/national security data to meet our science requirements. The Administration is pursuing an effort within the U.S. intelligence community to evaluate the potential applications of national security data to environmental issues. Through MEDEA, an interagency organization set up to explore the use of national security data by civil agencies, NASA has examined how MTPE might benefit from data that was previously classified. MTPE has been actively pursuing the possible uses of this data for the past few years, and we have incorporated elements of this activity into our present program. While these data sources are impressive, we have not found any areas where they replace our planned data acquisitions. National security data often lacks some of the key scientific precision needed for understanding global climate change, and does not often have continuous observations over a 10–15 year cycle as required by the scientific community. Given the nature of the intelligence business, there are also limits to the sharing of this data to the world research community. Unlike some of the U.S. military measurements which are site specific, NASA must obtain absolute, highly calibrated measurements on a global scale. For example, while DOD may survey a very small area in search of foreign weapons developments, NASA must measure a large area with great precision (e.g. measuring stratospheric chemistry constituents with parts per trillion accuracy). Where opportunities exist for utilization of national security data, the Administration is taking every effort to do so. These data can supplement planned scientific data and result in a stronger science program. However. these cooperative efforts will not and cannot provide NASA with the vast majority of specialized information needed for MTPE, and therefore will not substantially offset our budget.

New Millennium Program (NMP), a coordinated NASA/private industry activity, is our primary vehicle to incorporate advanced technology into our future missions. NMP is working to develop lightweight, low cost instruments, to demonstrate the technologies and techniques which can enable science missions of the future. NMP just selected its first Mission to Planet Earth mission, EO–1 (planned for a 1998 launch), which will focus on developing advanced land imaging technology that could be used for an advanced Landsat instrument to fly on EOS-AM–2. MTPE is also developing the technology for an advanced atmospheric sounder, technology that could then be shared with NOAA and DOD for the national Polar Orbiting Environmental Satellite System (NPOESS). Land imaging is the highest potential area for commercial market development.

From the broader science perspective, the scientific strategy of EOS was recently reviewed in depth by the National Research Council's (NRC) Board on Sustainable Development (BSD). The BSD endorsed both the scientific strategy and the implementation approach for EOS program and stated that the "first series (i.e. AM–1, PM–1 and CHEM–1) should proceed "without delay"; further downsizing of 1st series instruments and platforms would be "premature, since it could eliminate key measurements." As the suggestion of the Academy, though, NASA is currently studying platform options for the CHEM mission. A decision is expected before March 1997.

Any major delay of the program would lead to major programmatic and scientific problems that will clearly jeopardize the objectives of the Mission to Planet Earth program. Such a delay would not save money, and would significantly increase costs for the overall (MTPE) program due to inflation and other cost factors such as storing spacecraft/instruments and retaining uniquely skilled personnel. Also jeopardized by such a delay would be the ability to move forward with the value-added community to develop practical applications for our science data, such as precision farming.

Throughout the intensive scientific review and cost reduction activities of the past, the science community has always urged NASA to hold tight to our EOS schedule and critical measurements. The program will contribute fundamental improvements in long range climate and short term weather forecasting, as well as critical understanding of pollution and ozone. The future will always hold promise for ever-advancing technology, but somewhere along the line we must proceed with the work at hand; NASA believes that maintaining the EOS launch schedule is the key to that objective.

*Question.* Some justify cutting EOS because they say it is not sound science—that it is politically-driven science. Didn't last fall's National Academy of Sciences review of the program determine that the EOS program was based upon sound science? Can you describe the results of this review?

Answer. The National Academy of Sciences did conclusively validate that MTPE is an essential part of the Federal and international global change research effort in their September 1995 report. The Academy recommended NASA's approach to implementing the first series flights of EOS "without delay" and endorsed the results of the reshape exercise for the 2nd and 3rd series of EOS, particularly as they related to the incorporation of new technology and approaches in making measurements. Though the Academy believes that technology plays a key role in the evolution of Mission to Planet Earth, they insist that the science is the most important element of the program and must be preserved. The Academy recommended that NASA maintain a science-driven approach, which we believe is addressed by the release of our Science Research Plan for the next four years, which outlines Mission to Planet Earth science priorities. It also recommended some changes that we are in the process of reviewing and implementing.

### EOS DATA INFORMATION SYSTEM

*Question.* Do you have any plans to implement the "federation" management concept for EOSDIS during fiscal year 1997, except perhaps for some small prototype demonstration of it?

Answer. The Academy recommended that Mission to Planet Earth reconsider the means by which it planned to generate and distribute data products. In response to this recommendation, we developed an innovative concept for implementing this new approach for the data system. After presenting this approach at its March meeting, the Board on Sustainable Development tentatively recommended that we take a more evolutionary path approach to implementing this new concept. On the basis of this advice and other considerations, NASA is currently planning to proceed with a limited, pilot program as a vital first step in the implementation of the federation concept. As the pilot effort comes on line, and as we refine the concept further, we will be better able to address broader implementation questions. We do believe there are benefits to the concept and implementation approach recommended by the Academy. We will consult with the Congress on both our plans as well as on the results of the pilot process.

*Question.* How much would such a prototype demonstration cost?

Answer. NASA's first step in pursuing a federation approach to EOSDIS implementation is through an affiliation of environmental information and related service providers (and their users), referred to as Earth Science Information Partners (ESIP's). The prototype demonstration will consist of two Cooperative Agreement Notices (CANS) to extend the use and applications of MTPE data and information to the broader user community. The approach solicited by the CANS consists of establishing partnerships with other Federal agencies, state and local governments, universities, non-governmental organizations, non-profit organizations, and private companies.

The ESIP's may be divided into two general categories: (a) ESIP #1's and #2's, which are principally concerned with the research enterprise and are aimed at providing the global change research community with the necessary products to improve their understanding of Earth System Change; and (b) ESIP #3's which are concerned with extending the applications and benefits of MTPE data and information beyond global change research to part or all of the broader user community. Central to the function of the ESIP #3's is the function of transforming the MTPE science products into market driven applications products designed to meet the needs of a particular group of users.

NASA's support of the ESIP #3 initiative is designed to encourage the emergence and strengthening of the environmental information economy. Potential application areas of interest include: agriculture, forestry, land monitoring, land use and urban planning, atmospheric, oceanic, transportation, water resources management, vector-borne disease monitoring, environmental hazards monitoring, mineral exploration, marine and ocean applications and other areas relating to the use of spatial data. The specific objectives are the following:

—Improve public access to MTPE's research results, data sets and supporting algorithms;

—Demonstrate the effective use of MTPE's remote sensing data bases (leading to gains in economic growth, education and quality of life;

—Expand the relevancy of MTPE's science results and data by involving a broader user community which will apply these results and data in a near-term problem oriented setting;

—Leverage non-NASA capabilities in remote sensing, environmental activities and information systems in order to cost-effectively extend the social and economic benefits of MTPE's research to a broader user community and, thereby, enhance the relevance of scientific activity; and

—Fuse, integrate, and assimilate MTPE generated data with Geographic Information Systems (GIS) and other technologies presently in use by public and private organizations.

NASA plans to fund ESIP #2's at an aggregate level of approximately $15 million per year, contingent upon the availability of appropriated funds. It is expected that the funding for individual Cooperative Agreements for the ESIP's will be in the range of $500,000 to $1.5 million per year. Funding for selected #2 ESIP's will be for up to three years and may be renewed through response to future competitive solicitations. Joint proposals are encouraged that demonstrate effective partnerships or cooperative arrangements among institutions and among the government, nonprofit and commercial sectors. NASA funding will not be provided to other government agencies to fulfill their legislatively mandated requirements, but will be provided for information technology development and improved access to data products.

For ESIP #3's, NASA intends to fund 5 to 15 proposals at a total level of $3 million per year. These activities would be funded for periods of up to five years to allow user acceptance and market development to build to sustaining levels. A basic requirement is that the proposing organization provide co-funding of the projects throughout the period of performance. The co-funding can consist of in-kind services or value delivered to NASA-sponsored users or by the advancement of other NASA interests, and must exceed the level of funding provided by NASA in any given year. The level of support provided by NASA would decrease beginning with the third year of the agreement. The end objective is that the partner organization be self-sustaining at the end of five years and not require continued NASA funding even if the joint endeavor agreement continues.

*Question.* Beyond this "prototype," can you assure us that NASA has no other plans to accelerate EOSDIS towards management by federation until well after the year 2000?

Answer. Federal data centers have a clear role in the archiving of government data, whether from government satellites or provided commercially. The government will also provide the capture of data from government satellites and sufficient processing to ensure data reliability and accuracy. The refinement of this core data into useable information is where universities, commercial information systems, value-added firms, Earth Science Information Partners (ESIP's), and government centers can make real contributions. Specifically how DAAC's, such as the EROS Data Center and the Goddard Space Flight Center, will work with the private sector to distribute data for commercial refinement has not yet been finalized. The federation prototypes should provide a meaningful testbed to develop commercial/government data relationships. Proposals in response to the CANS will be due in November 1996. Peer review panels will evaluate the proposals. Selection of successful proposals is planned by March 1997, but selection may be made sooner or later depending upon the number of proposals received.

In parallel, all DAAC's will undergo a recertification process, but will otherwise continue to operate largely as before. At the advice of the NAS, NASA is taking a deliberate approach to evolution of the federation concept, and full-scale implementation, assuming a successful pilot effort, would not occur until after 2000.

## CASI

*Question.* When was the relocation of the Center for AeroSpace Information (CASI), from its current location to Virginia, proposed by NASA?

Answer. No proposal has been made to relocate the CASI from its current location to Virginia. The only proposal made, and approved, was to transfer the responsibility for the management of the Agency's STI Program, including CASI operations, from NASA Headquarters to the Langley Research Center (LaRC). This proposal was a result of the Zero Base Review (ZBR) and the Headquarters Workforce Review. LaRC's selection was based on two separate analyses. The first was conducted as part of an overall review of the STI Program, the second was conducted on proposals received from interested centers on functions to transfer to the centers. A building as large as the current building will not be needed to house the CASI operations in the future, but the exact size can not be estimated until after the Langley Business Process Review, that is currently going on, is completed.

*Question.* Can the management of CASI be provided by Langley if CASI remains at its current location?

Answer. Yes, the management of CASI can be provided by Langley if it remains at its current location.

*Question.* Did NASA explore finalizing the digitization of the stored information at the existing facility? If so, why does NASA's summary presume it will not be finalized by Feb. 1997, and discusses either not completing the digitization process or moving the collection until the process is complete? If not, why not?

Answer. Yes, NASA did explore finalizing the digitization of the stored information at the existing facility. The summary is discussing options because the NASA contract providing the contractor workforce at CASI expires in February 1997. Any follow on contractor may propose completing the digitization at a different site, or the use of a sub-contractor, or a different process all together. NASA is currently working with the CASI contractor to digitize the collection during the current contract.

*Question.* Was the relocation from Maryland to Virginia based upon a cost analysis conducted by NASA? What is the cost of relocating employees, including move of materials, and are these costs included in the fiscal year 1997 budget request submitted to Congress on Monday, March 18?

Answer. No decision has been made to relocate CASI from Maryland to Virginia. The decision to transfer the management of the Agency's STI Program, including CASI operations, from NASA Headquarters to the LaRC was a result of the ZBR and Headquarters Workforce Review. Cost was one factor along with LaRC's prior selection for a leadership role in STI and library management for NASA's Aeronautics Centers based on the Project Reliance initiative, along with a review of the proposal from LaRC to transfer functions to the centers. All costs are in the fiscal year 1997 budget request submitted. No additional request for funding will be made because of the STI Program management transfer to LaRC.

## QUESTIONS SUBMITTED BY SENATOR J. ROBERT KERREY

*Question.* You have before you a number of applications under a second round of grants for the EPSCoR program. In fact, those applications have been pending for about a year. When do you expect to make a decision regarding funding of the pending applications and how many do you expect to fund?

Answer. Proposals for the second round of EPSCoR competition were received at NASA Headquarters September 29, 1995. We are conducting a review process this summer, with awardees to be announced no later than October 1, 1996. We plan on funding up to four new proposals.

*Question.* How do you expect to use funds budgeted for EPSCoR in fiscal year 1997? When would you expect to have a grant solicitation on the street for these funds?

Answer. EPSCoR funds budgeted for fiscal year 1997 will be used to continue funding the new awardees that will be selected by October 1, 1996 and to fund renewals for up to six first-round awardees. We are currently conducting an evaluation process for the six current EPSCoR states, to determine if they should be renewed for an additional two years, as outlined in the program announcement.

*Question.* I know that the EROS Data Center in South Dakota is a USGS facility, but it does have important Landsat data and there have been some good relationships between it and the University of Nebraska. What can NASA do to support the EROS activities?

Answer. While originally developed as a scientific tool, remote sensing has evolved into a practical resource for land managers, farmers, educators, and state and local planners. Data from NASA's remote sensing efforts is already providing real benefits, which will increase dramatically in the future. For example, a local government or a small company could turn remote sensing data into information products that are marketable for their community. This emerging industry could access this information from the EOS Data and Information System (EOSDIS), the means by which NASA will make its remote sensing data available. The EROS Data Center (EDC) in Sioux Falls, South Dakota, is playing a critical role in EOSDIS, serving as the primary EOSDIS center for land surface images (such as those from Landsat). The EDC is playing a vital role in the distribution and archiving of Landsat–5 data for NASA, NOAA and USGS. EDC will continue this arrangement for Landsat-7 (scheduled to launch in 1998) and likely any future land remote sensing data collected for Government.

The University of Nebraska-Lincoln (UNL) and EDC are developing unique methods for using NASA Advanced Very High Resolution Radiometer (AVHRR) data for large area land cover characterization. Capabilities to inventory and map current land cover conditions, in addition to monitoring change, are required for an accurate assessment of the impact of Earth's environment on our climate and, conversely, the impact of climate on land ecosystems. This includes the importance of understanding the movement of water in the atmosphere—rainfall that results in groundwater and rivers—and evaporation that moves water from the oceans to the atmosphere. Two other significant pieces of information needed to complete land cover characterization are the transport of carbon among trees and plants (where carbon is stored), the atmosphere and the oceans; also, tracking the number of species that are natural to a given ecosystem.

Color treated composite images acquired over a 12 month period are compiled and refined, producing an integrated database that can be tailored to meet specific users' needs. The procedure has been used to develop a complete land cover characteristics data base for North America. Current work focuses on South America. These efforts are the first steps towards development of a global land cover characteristics database, to be completed in 1998. As the continents are completed, they will be released for initial use and evaluation through the EDC. The global database will be the first ever produced from a single year of data (March 1992–April 1993).

The U.S. database is currently being used by the Environmental Protection Agency, the National Weather Service, the U.S. Forest Service and the National Biological Service. Applications include climate modeling, carbon emissions studies, weather forecasting, water resources modeling, forest assessment, biodiversity studies, crop condition and soil water assessments. A special issue of the journal Ecological Applications, to be published in late 1996, will contain user reports on the value of the data. The global database has been selected by one of the EOS science teams (MODIS) to serve as the baseline ("at launch") land cover map. It was also recently announced that the Foreign Agricultural Office (FAO) will use the UNL/EDC global land cover database for its Year 2000 Global Forest Assessment.

*Question.* The recently enacted Farm Bill includes a section directing NASA and USDA to utilize remote sensing for data on a variety of agricultural purposes, including crop conditions, fertilization and irrigation needs, pest infiltration, soil conditions, and project production. How do you intend to respond to this legislation?

Answer. NASA and USDA have a long history of working with each other on research activities through the U.S. Global Change Research Program, and the USDA is one of the largest government purchasers of Landsat satellite data. NASA has engaged in a number of applications research efforts over the last several years to help broaden the application and use of Landsat and other remote sensing data in support of agriculture. This fall NASA, USDA, the Department of Energy, and the State of California will be holding a Workshop on Remote Sensing of Agricultural Systems at the University of California, Davis. The objective is to stimulate a dialogue between agricultural scientists, agribusiness, remote sensing specialists, and other industry experts on how remote sensing and geographic information system technologies can best contribute to the evolution toward a high precision agriculture in the western U.S. Finally, NASA has held preliminary discussions with the USDA Applied Research Service regarding co-sponsorship of a Cooperative Agreement Notice planned for late this fall aimed at extending applicable NASA science results to near-term applications in the field of agriculture.

Several agricultural applications of NASA science data are currently in use, as shown in the following diverse examples:

1. The Kansas Applied Remote Sensing Lab (KARS) of the University of Kansas has developed an "Index of crop condition," using satellite data. The Index uses a measure of plant "greenness," in response to the needs of the agricultural community, such as:

a. When did the crop first emerge after planting (when did "green-up" begin within a region?)
b. What is the developmental stage of each crop type within a region?
c. When will the crop be ready to harvest?
d. What is the condition of the crop at various stages of development?
e. What is the yield associated with each crop type within an area?

Sensors on weather satellites developed by NASA for the National Oceanic and Atmospheric Administration (NOAA) indirectly measure the chlorophyll content of growing plants. This "green content" is reflected back in colored data maps, created as indicators of healthy vegetation. Indexes can be used to monitor and map crop conditions frequently, at scales varying from the field to the continental U.S. Comparisons can also be made of crop conditions relative to the standards frequently used by farmers, such as current condition compared to the previous monitoring period, the previous year, and the average for many years. These comparisons are useful for monitoring plant developmental stages and stress due to insects, disease, and adverse weather conditions. Year-to-year comparisons make it possible to assess crop conditions relative to a period most easily recalled by the agricultural industry. KARS anticipates that maps from The Vegetative Index Report may soon be accessible for a fee through the Internet.

2. The Upper Midwest Aerospace Consortium (UMAC) is a distributed information system, based on electronic co-location, between the Universities of Idaho, Montana, Montana State, North Dakota, North Dakota State, South Dakota State, South Dakota School of Mines and Technology, Wyoming, and the EROS Data Center. US West is contributing the telecommunications links for this electronic network. The Consortium has four primary objectives:

(1) Technology transfer of research results immediately into the public sector;
(2) Improve public knowledge and use of space-based data to enhance the region's natural resource-based economies;

(3) Utilize the full capability of EOS satellites and remote sensors; and

(4) Engage the creativity of new users.

The UMAC seeks to accomplish these objectives within each local area through a Public Access Resource Center (PARC), sponsored by UMAC. The purpose of the PARC would be to translate NASA's Mission to Planet Earth science research results and data into information products of specific relevancy to different user communities, such as agribusiness. Activities like the PARC would also potentially create a multiplier effect necessary to ensure greater use of the data, and distribute value-added products to a broader user group; this is particularly valuable in conjunction with the Global Positioning System (GPS) used in "precision agriculture." Based on the results of the project definition phase, NASA plans to fund UMAC for another year to develop and test prototype products for the agriculture community through such a PARC. UMAC would be encouraged to apply to an open solicitation planned for this fall, in which NASA will be seeking to establish cooperative agreements designed to extend the applications and benefits of NASA's data and information to a broader user community. Selections for this solicitation are expected in late spring of 1997.

Such prototype remote sensing products could be used to make early predictions of crop conditions and yields for establishing crop prices; earlier and more detailed information concerning crop harvesting times and locations for improved planning of transportation, improved response of the insurance industry to crop damage by inclement weather; better informed farmers for improved decision making process concerning the shipping and selling of crops; and improved information on the distribution by crop types within a region.

3. The $9 billion per year California wine industry is using early remote sensing detection to mitigate crop losses due to phylloxera (root-louse) infestation. It is estimated that total losses (due to replanting costs and reduced yields) in the Napa Valley alone will be approximately $350 million. NASA has teamed with Robert Mondavi Winery, the University of California and California State University partners to respond to the user need with advanced remote sensing and Geobased Information System (GIS) technology. Digital images from aircraft are used to detect and quantify vineyard decline associated with the infestation. Landsat data is being used to monitor associated decreases in vineyard acreage across large regions, and a computerized database is being developed to identify fields at risk of future outbreak. The improved information will enable the wine industry to manage their vineyards in the most cost-effective manner possible, and to more accurately generate financial forecasts. The combined aircraft and Landsat data alert growers to the expected infestation a year ahead of time. This warning is critical to understanding the magnitude of the problem and taking mitigation measures designed to prolong the yield of the infested plants. It is anticipated that this technology will be used in other wine-growing regions of California and Oregon, and ultimately within the broader agricultural community. The technology developed in this project is currently being transferred to the private sector (Mondavi, other interested growers and value-added remote sensing companies) for future applications.

4. MTPE, in partnership with the University of Maryland, provides Landsat data and technical expertise to organizations such as the Maryland Department of Natural Resources. Together they identify areas of rapid marsh loss which are in the stage where simple remediation efforts would be effective. Efforts to determine the health of marshes along the Atlantic Coast are in process. Coastal marshes, such as those in the Chesapeake Bay, provide the hatcheries which are critical to maintaining aquatic life at the levels necessary to maintain the sea food industry, support water fowl, and protect shorelines. The ability to identify unhealthy marsh in time to prevent its loss is critical to sustaining the local economy which depends on seafood production, eco-tourism and real-estate that support activities such as duck hunting. Regular availability of data allows users to easily and inexpensively monitor marsh change over large areas.

*Question.* I am very interested in the use of NASA data and materials in the classroom, especially when such materials can be fully integrated into the curriculum. What are your plans for continued work in this area?

Answer. NASA is committed to utilizing the data and related materials derived from our research missions for curriculum applications in the classroom. All NASA's education programs demonstrate applications to and support of mathematics, science, engineering and technology education reform efforts and, to the extent possible, use state-of-the-art technology.

We have articulated five implementation approaches for NASA's education program (Teacher/Faculty Enhancement; Student Support; Comprehensive/Systemic; Curriculum Support/Dissemination; and Educational Technology) and two of these five, Curriculum Support and Dissemination and Educational Technology, directly address the issue raised in your question. These five implementation approaches provide the basis for NASA's education activities.

The goal for Curriculum Support and Dissemination is to develop, utilize, and disseminate science, mathematics, and technology instructional products based on NASA's unique mission and results. Although most of this activity is aimed at the K–12 curriculum, we also support the development and augmentation of higher education curriculum. The goal of the Educational Technology program is to provide products and services that facilitate the application of technology to enhance the educational process for formal education and lifelong learning.

Numerous initiatives have been supported through these two programs and continuing activity has been included in NASA's budget request. Note that the initiatives supported include an emphasis on partnerships with local, state, and national organizations which are capable of working with NASA to ensure that the data and materials developed are relevant to school curricula.

## SUBCOMMITTEE RECESS

Senator BURNS. Thank you. This hearing is recessed.

[Whereupon, at 3:40 p.m., Thursday, May 16, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

# DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT AND INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1997

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**FRIDAY, MAY 17, 1996**

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
*Washington, DC.*

The subcommittee met at 9:37 a.m., in room SD–192, Dirksen Senate Office Building, Hon. Christopher S. Bond (chairman) presiding.

Present: Senators Bond, Burns, and Mikulski.

## CORPORATION FOR NATIONAL AND COMMUNITY SERVICE

### STATEMENT OF HARRIS WOFFORD, CHIEF EXECUTIVE OFFICER

**ACCOMPANIED BY:**
**SHIRLEY SAGAWA, EXECUTIVE DIRECTOR**
**GARY KOWALCZYK, ACTING CHIEF FINANCIAL OFFICER**

### OPENING STATEMENT OF CHRISTOPHER (KIT) BOND

Senator BOND. Good morning, ladies and gentlemen.

The VA, HUD, and Independent Agencies Subcommittee hearing will come to order.

The subcommittee meets this morning to discuss the budget request of the Corporation for National and Community Service for fiscal year 1997. After a long battle, Congress and the President, just a few weeks ago, agreed to fund the national service programs under this subcommittee's jurisdiction at $402 million for this fiscal year.

We are very pleased to welcome a former colleague and a good friend, CEO Harris Wofford.

Senator Wofford, the President had initially requested $817 million for the program for this year, but the will of the House and the Senate seemed to be that the figure would be lower than that, somewhere around zero. The compromise figure of $402 million is just about the midpoint between these two positions.

Now, the President's budget request totals $543.5 million for fiscal year 1997. The amount requested for these programs would, thus, be an increase of approximately 35 percent over last year. I would say that number is out of the ball park. The majority party in Congress is trying to hold down spending in all programs, not increase it. We take the President at his word, when he said in the

State of the Union Address, the days of big Government are over. I do not believe that this is the direction we necessarily should be going.

I still have some problems, as I have said before, about the priority for paying volunteers. As we've been discussing on the floor recently, we have a duty to keep a promise made to our veterans who risk their lives for our freedom, that they would always have health care, but the long-term 6-year budget has proposed cutting veterans' health care by 25 percent over the next 6 years, a figure which is totally unacceptable and I believe both sides of the aisle in the Senate agree is unacceptable. That would amount to closing at least one out of every four veterans' hospitals, and I think we all know that cannot be done.

I offered an amendment to restore the cuts made by the President's proposed budget in veterans health, and the 75 yea votes I think make it clear that Congress has a different priority and its one on a bipartisan basis.

I would suggest that feel-good programs or desirable programs that are not compelling priorities in my view like AmeriCorps may not be in place for the kinds of increases recommended. I recognize what has been done to get the costs under control. I compliment you on taking some constructive steps in the right direction, but I think the program is still too expensive.

The Government Accounting Office reported that for the 1994–95 program year the total cost of AmeriCorps per participant averaged more than $26,000 per participant. Many programs were far more expensive, particularly when they got into being run by Federal agencies. The cost of one HHS program was more than $45,000 per participant, and the Navy's Seaborne Conservation Corps cost $66,715 per participant.

When we look at the cost per direct service hour, we find that on average AmeriCorps costs about $20 per hour; HHS projects, about $33 per hour; and the Navy's project, about $49 per hour. I just do not think we can justify those kind of costs to the working men and women of America. I believe the decision was a wise one not to fund Federal agency programs any longer.

I believe that we have to keep our eye on the big picture. When the Federal Government continues to borrow $100 billion to $200 billion per year to finance deficit spending, we will have to pay interest on what we borrow to fund the programs that we no longer have money for. So, when you take a look at the costs of AmeriCorps, the program is not only the $26,000 to $27,000 but the interest on the borrowing to pay for it.

As the GAO points out, "The study failed to recognize the costs associated with raising tax revenues to pay for new Government spending programs."

From a big picture perspective and with the debt burden our children are facing, I still do not see how we can afford the program at this time.

Looking to the program itself, I continue to have concerns about the high cost per participant, the way in which funding decisions are made and some of the groups that continue to receive funds.

But I do commend you, Senator Wofford, for your willingness to work with Senators on constructive reforms to the program. We are very pleased that you have taken seriously the criticisms of the ways in which grants were awarded and are trying to reduce costs through more scholarship-only programs. I view your arrival at the corporation as a very positive step, and I commend you for the work that you have been doing.

Frankly, prior to your arrival, in my view, there just was not any willingness in the Corporation to admit that changes needed to be made and that costs should be reduced. I am glad you are here and I think that your leadership is probably the very best news that the Corporation could have for its continued viability in the process because you have recognized the changes and you have taken positive steps. I want to make sure that you understand how pleased we are with that.

Now with that, I am pleased to turn to my distinguished ranking member who really has been the most effective advocate and champion of the program, Senator Mikulski.

## STATEMENT OF BARBARA MIKULSKI

Senator MIKULSKI. Thank you very much, Senator Bond, and I want to thank you for holding this hearing. We are in an awful tight timetable in terms of this fiscal year, and we have all survived 13 continuing resolutions, including the Corporation for National and Community Service.

Mr. Chairman, just a quick background. The whole idea of national service was to link our values with our public policy, first of all, to say yes to the kids who say no to drugs and alcohol and many of the other problems and to give them an opportunity structure. The other was to link responsibility for an opportunity, essentially to reinforce the old civic virtues that need to be rekindled, and also to help young people to deal with their first mortgage which is now their student debt, which is reaching astronomical proportions and really eliminating each day the opportunity for the middle class to seek higher education.

This was not a means tested program. It was never meant to be a means tested program. It was meant that a broad based number of young people of a variety of social classes and backgrounds through sweat equity got out there and did something for their country and in return had a voucher for higher education or additional training in some way. That's its purpose pure and simple.

We want to thank you for continuing this program in the fiscal year 1996 budget.

I know that Mr. Wofford has done a very good job of putting the Corporation for National and Community Service back on track with a very clear navigational chart, focusing on its mission and purpose. I believe he has mended fences on Capitol Hill where at times the best communication did not exist. Most of all, got his hands on the money so that we could reduce costs and increase opportunity.

I have a seven page statement that I would like to put into the record of numerous examples of where we are literally helping build character in young people and helping build community around the United States of America.

PREPARED STATEMENT

I look forward to hearing Mr. Wofford's testimony and, hopefully, the opportunity to continue the program.

Senator BOND. Thank you very much, Senator Mikulski. Your full statement will be made a part of the record.

[The statement follows:]

### PREPARED STATEMENT OF SENATOR BARBARA A. MIKULSKI

Thank you, Chairman Bond. Let me begin by welcoming our esteemed witness and former colleague—Senator Harris Wofford, the Chief Executive Officer of the Corporation for National and Community Service.

Mr. Chairman, it has been an interesting and challenging time for the Corporation since its last hearing before this subcommittee in June 1995.

There have been attempts to eliminate the Corporation or drastically reduce its funding. The Corporation's budget has been reduced since fiscal year 1995 by $175 million. If not for the bipartisan efforts of you, Mr. Chairman, Senator Grassley, and others, those reductions would have been even greater.

I'd like to begin, Mr. Chairman, by commending the diligent efforts undertaken by Senator Wofford and his staff to make the Corporation for National Service a more efficient and effective program.

Mr. Chairman, Senator Wofford has been a shining example of the bi-partisanship that we need to see more of these days. His willingness to listen to and work with his critics as well as his supporters—whether Democratic or Republican—is both refreshing and necessary to getting the job done—which is the bottom line.

There have been a number of valid criticisms and questions about the Corporation raised in the last year—including concerns about the costs of the program. We all want to see the taxpayers get the most bang for their hard earned buck. I understand that Mr. Wofford and the Corporation have taken numerous steps to reduce costs—including cutting administration, reducing allowances to some members and setting reduced targets for costs per member. I look forward to hearing more about those steps this morning.

Criticisms were raised about the reliance on federal funding and the need for the Corporation to become an increasingly independent program. The Corporation has moved to raise the private sector matching rate from 25 percent to 33 percent. I'm certain Senator Wofford will want to speak on this as well.

Concerns were raised about the involvement of the Corporation with federal agencies. The language agreed to on a bi-partisan basis in the Omnibus CR has eliminated grants to federal agencies. We have ensured, however, that local non-profits affiliated with federal agencies can apply for funding on their own. I hope that Senator Wofford will also speak to that.

Concerns were also raised by you, Mr. Chairman and others about the funding of national direct grantees. In the final fiscal year 1996 bill, we limited funding for national direct grantees to $40 million. I think we need to take another look at that reduction, Mr. Chairman, and I will address that further during my questions.

Yes, Senator Wofford and the Corporation have had a challenging time during the last year. I know you have worked hard to implement the recommendations of the mandated audibility study, and we would like to hear details about that. I know you have worked to find a competent and qualified Chief Financial Officer—and I'd like to hear the status of that process.

Mr. Chairman, I must note however, that the Corporation's work during the last year has not been limited to fiscal exercises and government oversight.

There is another story we need to hear this morning—the story of young men and women who are providing service to communities around the country. We need to hear the story of communities changed for the better. We need to hear about what I call "habits of the heart", instilled into a generation of young people; the stories of people who are learning about the joys and benefits of volunteering and helping their fellow Americans.

Mr. Chairman, along with details about fiscal belt tightening, we need to hear about social sleeve rolling—folks in communities who are rolling up their sleeves to help improve the lives of real Americans.

In my hometown of Baltimore, the Sisters of the Notre Dame Mission Volunteer Program and AmeriCorps members are tutoring low-income children, and teaching literacy skills to adults.

In Silver Spring, MD, 37 AmeriCorps members have helped train 1,000 senior citizens in crime prevention and recruited volunteers for neighborhood watch programs.

These are the stories we need to hear about this morning—stories of personal responsibility and sweat equity. Stories about the values that helped make this nation great—hard work and concern for your neighbor.

Mr. Chairman, I'd like to hear Senator Wofford describe how the Corporation has assisted members in their pursuit of education—how the Corporation is helping those trying to improve their paycheck security and earning potential by obtaining a college education.

Mr. Chairman, there are some hard decisions that this subcommittee will have to make about the budget for the Corporation for National Service. The budget constraints on our subcommittee won't allow the 35 percent increase that the Corporation is seeking.

We need to hear from Senator Wofford about the steps that the Corporation has taken to address concerns raised here in the Congress, and the steps taken to make the Corporation the most cost-effective program it can be.

But Mr. Chairman, it is crucial that in these times of high profile rancor and partisan bickering, we hear a success story.

A success story of a program that is working to improve communities, transform lives, and rekindle the values that will help this nation enter the 21st century as a land where the habits of the heart, of personal responsibility, concern for the neighbor, hard work and confidence in a brighter tomorrow are the order of the day.

Mr. Chairman, I thank you for holding this hearing, and I look forward to hearing from our witness today.

## STATEMENT OF CONRAD BURNS

Senator BOND. I now turn to Senator Burns.

Senator BURNS. Thank you, Mr. Chairman, for holding this hearing today.

It is good to see our friend and colleague. We get to visit with him just about every Wednesday morning, and we are glad you are here.

We are also glad that you have taken a great interest in this.

I still have doubts about the program. At $26,000 each a year, I do not know how much we are instilling in voluntarism. I guess I look back on my own life that I started off to learn how to work and then to build character, and I am sure going to train my kids the same way.

I think even though there are some doubts about the program, it is nice to get young people into the swing of things in this country on just what makes it tick. I am still a great supporter of the man who picks the cat up by the tail. Mark Twain had a great saying that the man who picks the cat up by the tail learns much more about the cat than one who sits on the sidelines and observes. I still subscribe to that. But, nonetheless, at $26,000 a year, that might be a pretty expensive cat.

So we will listen to Harris this morning.

I know from where he comes. He is a motivated man in public life, and that has great merit and it has great weight with me. I appreciate him coming this morning. Thank you very much.

Senator BOND. Well, thank you very much, Senator Burns. We are going to have the staff look into the cat-by-the-tail analogy. [Laughter.]

Senator BURNS. You ought to try that.

Senator BOND. There is a deeper meaning in there somewhere that I know has an application.

Senator BURNS. It was one of your great citizens you know.

Senator BOND. I know he was a great citizen, but I am a little slow this morning. I have not made the full connection, but we will work on it. If you could have your staff give us some background papers on that, we would appreciate it.

Harris, you have an excellent 19 page statement. I assure you that we will put the whole thing in the record. We will urge our colleagues to read it very carefully. If I could impose on you to summarize that and maybe cut that down to about 10 minutes or so, I think it would certainly help all of us. I will put out a special request that everybody read it. So, with that, Senator Wofford, welcome.

## STATEMENT OF HARRIS WOFFORD

Mr. WOFFORD. Thank you, Mr. Chairman. I appreciate the words from you that were kind, especially warm, and I appreciate the words from you that were straightforward and put the questions clearly, the questions in your mind.

Senator Mikulski, I have to salute you as the founding mother of national service. But, as I do it, with warmth and a great appreciation for the ideas and the fire that you have put into the effort over many years to bring this to this point, I want to reclaim and pay tribute to the bipartisan tradition that has brought us here. I point out that the 1990 act passed with substantial bipartisan support, and was signed by President Bush. That first National Service Act set us on the path of most of the programs we have here. Almost all of the programs here were begun then, though at about one-third the force perhaps that we have now.

The National Civilian Community Corps was created in the Bush administration. Senator Boren and I were moving that, but we had great support from Senator Dole in persuading the White House it was a good thing to do. The tradition of national service includes Bill Buckley. It includes General Schwarzkopf. It is from the right to the left. It is an American idea.

I have been most distressed by the degree to which it became a political football. In a hard political season, it became a partisan issue. I think I understand some of the reasons why and I understand some of the criticisms that we have been working on.

## FUNDING CUTS ALREADY TAKEN

Mr. Chairman, when you began commenting on the appropriation request and pointed out what the President had originally hoped for for the year to come, I thought you were going to go further and commend us for the modesty of the request that is before you today compared to what the original hopes were. We have a chart that conveys a little of that point.

The original plan by now would have had, as you pointed out, some $800 million in an annual appropriation, and all together the plan that was begun 3 years ago was that in those 3 years, there would be $1.5 billion in funding, which was a very substantial reduction from what the President originally proposed. In fact, if the appropriation requested were given this year, it would come to less than $1 billion and that would be a reduction of well over $500 million of what had originally been proposed for the first 3 years.

I do point out that the budget request this year, while obviously significant in a very difficult year with fiscal restraints on you that

I well understand, still brings us not up to, not back to what was originally appropriated for 1995 before the rescission.

But in any case, Mr. Chairman, I appreciate your difficult assignment and the difficult problems of the Congress and the country in tightening our belt and reducing our debt and at the same time meeting the increasing national challenges. I am delighted that bipartisan agreement was reached that enables AmeriCorps and the learn and serve programs under your jurisdiction to continue for a third year to prove their worth.

My testimony, I want to note, does not address, as you know, VISTA and the senior corps programs funded by the Labor, HHS, Education Subcommittee under the Domestic Volunteer Service Act, which also has a long bipartisan tradition. I appreciate your special support, Mr. Chairman, over time for VISTA and its 30-year track record of helping people and communities help themselves.

## WHY WE NEED STIPEND SERVICE

You made the point very eloquently on the floor in a debate not too long ago that you recognize that to make unpaid volunteering, traditional community volunteering, effective, you have to have a cadre of full-time people. In Habitat for Humanity, you have to have some people who have the site ready and lead the crew and who, in fact, help recruit the people who come in—who help organize it. The VISTA wing of AmeriCorps in some places has done just that. You said that is why you liked VISTA because you recognized the need for that kind of full-time service.

I think you yourself gave the answer to why there needs to be a combination of large-scale unpaid service in this country to deal with our critical problems and some full-time service people. In the volunteer army, you do not say these are paid volunteers. It is recognized in the military service that if you are to have people on those assignments and to have people of all backgrounds and not just very rich volunteers who could do it without any living allowance or pay, you have to have living allowances. If you want this to be an all-American program, you have to have some living allowance. The Peace Corps has long been recognized for that and you have recognized VISTA for that.

George Romney said the twin engines that you need to make the civic sector successful in dealing with our problems are large scale, traditional, unpaid volunteering, and national service that gives full-time service—a cadre of leaders that can help organize and give leadership to that great untapped power of civic action.

Senator Burns, I would like to thank you too for the cat-and-the-tail metaphor. I have given you one of my metaphors right now in George Romney's twin engines, and I would add a second metaphor. We need to find a way to crack the atom of civic power in this country. If big Government is not the answer and there is going to be less Government, we need bigger citizens. We need great citizens and we need a rebirth of citizenship. I think that is the essential part of what AmeriCorps is all about.

But I diverted from the point about VISTA being in another committee to make the point that is my third metaphor for the day, which is Ronald Reagan's vision of national service and community volunteering. In his fine words in accepting the Republican nomination for President, he said, "Let us pledge to restore, in our time, the American spirit of voluntary service, of cooperation, of private and community initiative; a spirit that flows like a deep and mighty river through the history of our Nation."

One of the problems of that river today is that it is divided in so many different streams. Some of those streams, we hope through the national service and community volunteering of this Corporation, can be brought together in effective ways.

### THE PROGRAMS OF THE CORPORATION FOR NATIONAL SERVICE

So, it is important, as you look at the two measures before you, the AmeriCorps Grant Program and the Learn and Serve Program, that you recognize the role of our other programs: the three senior programs, the retired senior volunteer program of some 400,000 members, and the thousands of foster grandparents, and senior companions. About 500,000 strong senior corps, commissioned by the White House Conference on the Aging to go to 1 million by the year 2000. There ought to be 10 million seniors engaged in substantial service at the end of their career because that is when they could give this kind of sustained leadership, and most of them without any pay. And the VISTA Program is an essential part of this team that we are trying to put together.

The other great pool of talent, like the seniors, are the 50 million young people in our elementary and secondary schools and more than 10 million in higher education. Last Friday, as you may have noted, the President at Penn State lifted our sights to new efforts to spread that ethic of service to every school, college, and university in America. That is the aim of the Learn and Serve Program which is before you in your jurisdiction.

I look forward to working with the President, with Members of Congress of both sides of the aisle, with Secretary Riley, with Governors, with State commissions on national service and community volunteering, with business and education leaders to try to develop and carry out those initiatives proposed by the President.

I will try to keep within 10 minutes and certainly you can keep me within my 10 minutes. If I may make just a few more points, Mr. Chairman.

Senator BOND. If you would try to summarize it in 3 or 4 minutes, then we can get on with the questions.

### SAVING SENIOR'S LIVES IN ST. LOUIS

Mr. WOFFORD. I would like to call your attention to both the letter in the record relating to the new Jefferson Arms apartment building in your St. Louis when an electrical fire broke out and all 400 senior residents had to be evacuated. The St. Louis emergency response team of AmeriCorps was called and worked round the clock to evacuate seniors and assist the Red Cross and deliver the needed medication.

Afterward, the head of that wrote,

> The AmeriCorps team provided a level of caring that went far beyond the call of duty. The AmeriCorps members helped us turn a potential crisis into a very positive experience for our seniors.

One of the senior residents wrote, "You are the greatest. There are not enough words to express how we feel for the splendid love and the care you gave us."

I also would like to put those in the record.

Senator BOND. We will be happy to accept them. We will include all of them in the record.

[The information follows:]

### LETTER FROM KENNETH O'NEILL

THE NEW JEFFERSON ARMS,
*St. Louis, MO, May 3, 1996.*

Mr. BILL CLINTON,
*President of the United States of America, The White House,*
*Washington, DC.*

DEAR MR. CLINTON: On behalf of our residents and staff, I would like to express my deepest appreciation for the AmeriCorps program.

On April 24 at 10 p.m., a five-alarm underground fire necessitated the immediate evacuation of our 400+ senior residents. Despite the fact that many St. Louis agencies and private individuals offered assistance in our time of need, we could not have been successful in our efforts without the 37 members of the St. Louis AmeriCorps Emergency Response Team, under the direction of Bruce Bailey.

I must admit that we were not very familiar with AmeriCorps. Based on our recent experience, we now have a clear understanding and great respect for your program. The AmeriCorps team provided a level of caring that went far beyond the call of duty. In addition to locating and delivering critical medications, they treated our seniors with respect and dignity. They became their friends and their confidants. They became an extension of our staff—literally overnight.

AmeriCorps helped us turn a potential crisis into a very positive experience for our seniors. I can't say it better than Anita Schulte who wrote one of the many thank you notes we have received during the past week: "* * * you are the greatest. There are not enough words to express how we fell for the splendid love and care you gave us. I am very proud to be a part of the Jefferson Arms."

Sincerely,

KENNETH O'NEILL,
*General Manager.*

### RENOVATING THE ARTHUR CAPPER SENIOR APARTMENTS

Mr. WOFFORD. Thank you.

In addition to those letters, the story from the Washington Times headlined "AmeriCorps Kids Rescue Run-down Housing," describing how the National Civilian Community Corps members at the Arthur Capper Senior Apartments have been hard at work repairing and renovating this center with aging housing units in terrible repair. The physical transformation is only a small part of the human transformation that that article describes. If that may be in the record, too.

[The information follows:]

[From the Washington Times, Apr. 29, 1996]

### AMERICORPS TO THE RESCUE

(By Lisa Nevans)

From her wheelchair in her L-shaped studio apartment, Blanche Easley points out a hole the size of a folded newspaper at the base of the wall, partially covered by a patch of dinosaur-bedecked wallpaper.

"There's holes in the closet door, and in the kitchen by the stove," Miss Easley, 77, says as a cockroach ambles along one dingy, gray wall. "I've been here 15 years, and it's been about seven years since it was last fixed up."

Even as she speaks, three young women dressed in navy blue paint-stained overalls and gray T-shirts spread a plastic drop cloth over the coffee table, which they've moved to the middle of the room.

They are AmeriCorps members, part of a team of young people who have been working since January to renovate the decrepit Arthur Capper Apartments in Southeast, a public housing complex for low-income seniors and handicapped people that is now in receivership.

The corps members, ages 18 to 24, will drywall, spackle, paint and exterminate roaches in Miss Easley's third-floor apartment, as they have done at some 210 others in the 297-unit building. Beyond renovating the building and cleaning up from decades of government neglect, corps members from across the country and the elderly residents say they are building trust and learning from one another.

"The residents are fund to talk to, 'cause they've lived whole lives. They don't have any epic stories, but it's just life, you know, real life," said Chris Fox, 18, a recent high school graduate who grew up on a farm in upstate New York.

But they are concerned that their hard work will be for naught, if the building is allowed to fall into disrepair again after they help bring it back up to code.

AmeriCorps has been at the center of what former Democratic Sen. Harris Wofford describes as a "storm" in Congress, as Republicans targeted President Clinton's national service program for elimination and the president fought to save it.

Some Republicans have vowed to gut the program, which they see as another big-government bureaucracy that spends some $18,000 or more in taxpayer money per "volunteer" each year, for work that could be done by private charities. They also have criticized poor accounting practices at the program's parent agency.

Mr. Wofford, chief executive officer of the agency that oversees the program, likens it to the Peace Corps. He says corps members earn $7,800 for a year of service, as well as a $4,725 stipened at the end that can only be applied to education expenses. The $18,000 figure includes supplies, equipment and other support expenses.

So far, the GPO has failed to do more that slice AmeriCorps by 15 percent for fiscal 1996.

Meanwhile, 73 corps members—who include high school and college graduates, college students and high school dropouts—have spearheaded a top-to-bottom renovation at the eight-story brick apartments just blocks from the Capitol. Five of their colleagues, who are assigned to do landscaping at the National Arboretum, have spent two weeks weeding, planting trees and flowers, and otherwise sprucing up the outside.

Residents rave about the corps members and the work they've done to transform grimy, water-spotted hallways and apartment walls to bright and sparkling. But the relationship wasn't always so friendly.

At first, residents were skeptical and felt having a group of young people they knew nothing about come into their homes was an invasion of privacy, said Walter Oliphant, 66, president of the resident council.

"They though, 'These kids, they're not going to do it right, they ain't been trained right,'" Mr. Oliphant said.

So the corps members started work on the common areas on the first floor, instead of in apartments. Residents saw that, despite their lack of expertise as professional painters, the youths did a thorough—and enthusiastic—job.

"They come to work and they work, they don't sit on their butts and play," said resident Joan Buie. "You can count on them. If they say they're going to do the third floor and be done at 12 o'clock, they'll be done at 12 o'clock."

The youths may be part of a government program, but what they've experienced so far has not necessarily made them fans of government. Because the buildings were allowed to fall into dramatic disrepair in the past, they wonder what will happen after they leave.

"These apartments need more than just paint," said Shannon Wuitschick, 23, a University of Oregon graduate who majored in political science. "They need exterminating, there are plumbing problems, they need new screens on the air conditioning. And it's not happening till Secretary Cisneros comes."

Henry Cisneros, secretary of housing and urban development, toured the complex last week with Mr. Wofford and D.C. Housing Authority Receiver David Gilmore, who took over the agency last July.

A spokesman for the D.C. Housing Authority said the building would have been renovated within about eight months even without AmeriCorps under Mr. Gilmore's plan to renovate every crumbling public housing complex in the District.

Mr. Gilmore has initiated a six-month maintenance plan for every public housing building once it has been renovated, as part of his report to the court on how he will turn around the troubled agency.

By January, Housing Authority workers should perform the first of the twice-yearly maintenance checkups at Arthur Capper Apartments to ensure the building stays up to code, said Arthur Jones, the authority's spokesman.

"It's easy for me to say we're going to do that, but that's part of our commitment: We have to be the judge," Mr. Jones said.

Students who have gone into paint have found apartments without working ovens or sinks. For more than a month, they have pushed city housing officials to install a sink in one apartment that we left essentially without running water.

Kate Becker, coordinator of education and training for AmeriCorps' National Civilian Community Corps, said she learned of the issue Tuesday and called the Housing Authority the next day. They were hoping to install a sink by the end of the week, she said.

"Their supervisors have been told whey they are in the units and see things of that nature to let us know," Mr. Jones said. "If someone needed a new sink, we'd certainly have a new sink for her."

## HELPING CHILDREN AND YOUTH

Mr. WOFFORD. I would like to suggest there are two untold stories about national service.

One is the degree to which we are getting things done on many critical problems, but especially that more than one-half, probably about two-thirds, of our assignments are focused on contributing to the solution of the problems of the educational decline and the educational challenge related to children and youth. Since I have been sworn in, I have been interested in increasing that focus on the problem that I think is the deepest, most troubling problem on the minds of most Americans, the future of our young people.

The story of what AmeriCorps is doing is detailed in some degree in my written statement. In all of the sound and fury and the lightening striking AmeriCorps under the Capitol dome, at the grassroots around the country that is the big story of what has been happening.

## LEVERAGING VOLUNTEERS

The second untold story is the degree to which AmeriCorps members and the programs of the Corporation before you and in the other committee are generating an extraordinary amount of unpaid volunteering. It is an extraordinary story. It is estimated by one critical evaluation and research study that 16 unpaid volunteers have been leveraged and generated by each AmeriCorps member.

## THE GENERAL ACCOUNTING OFFICE REPORT

Last, let me please make clear to you—and I assume you know, but I want you to be sure that you understand—that the GAO cost figures cited are the whole cost of a project, of a Habitat project, of of any number of our 430 different projects that get grants. The Corporation's cost found by the GAO was $17,600 per corps member. They then said if you included all the other help from Federal agencies, it comes to some $19,000 per corps member. The $26,600 estimate is taking into account what private corporations, private individuals, school districts, police departments, State and local governments put into the projects.

## WHAT AMERICORPS MEMBERS EARN

What a corps member gets is approximately 105 percent of the poverty level, the VISTA formula of 30 years. Almost all the full-time corps members get approximately $7,900 in living allowance for the minimum 1,700 hours, which puts them just slightly above the minimum wage, and since almost all corps members that we know about go beyond the 1,700 hours—many, many go far beyond it—they get less than the minimum wage which puts them in the lowest 2 percent of the American worker.

They also get, if they draw it down, a $4,725 educational voucher for job training, for college and for university payments or loans. And if they do not have a health plan, they get a health plan.

So, the total benefits to a corps member is some $13,000.

I just ask you to think how it affects the spirit of those corps members, when they read from speeches in Congress or in the press, that they are making $26,000 a year. Instead of respecting their commitment to serve their country, it is suggested in the press that they are making a killing.

I was with a young corps member in Albany the other day—900 of them from all over New York. The streams of service were there together for a session on how we improve what we are doing and do it better. This fellow says,

> The thing that just burns me, that makes me so angry it paralyzes me almost, is when I read in the paper—while on the one hand I am defending myself with my family, for not making more money and for taking the time to do this—and then I read in the paper that people are being told that we are being paid $20,000 or $26,000 a year.

On the examples that you gave I would like to give you a detailed breakdown—on the Magic Me and the Seaborne Program in Texas, including why the Navy thinks the expenditures they are putting into that program produce a great product. But the Corporation's average contribution is about $18,000 per corps member.

### WHAT THE CORPORATION FOR NATIONAL SERVICE HAS ALREADY DONE TO CUT COSTS

I would like to report to you today on the steps that we have taken—shown on the chart before you to reduce costs.

The elimination of Federal grants, increasing the required program match from the grantees from 25 percent to 33 percent, and the above average cost programs being asked to cut by 10 percent this year. The State grant programs have been reduced by 7 percent, and the State programs are two-thirds of the AmeriCorps programs. The National Civilian Community Corps, the NCCC, as Senator Mikulski knows, closed the Aberdeen campus because its costs were far above average. The living allowance was reduced from $8,000 for NCCC members to $6,000 this current year and next year it will be reduced to $4,000 a year. The Federal administrative costs have been cut by over $7 million, 12 percent in 1996, and with Senator Grassley's help and other colleagues who are interested in it, we are going forward with the education award only program which will further reduce the costs.

### COST REDUCTION GOALS

Today I will close by reporting that we have now agreed to set the goals for further cost reduction in this next 3 years—in fiscal year 1997, to reach an average budgeted cost of $17,000, and in 1998 an average of $16,000, and in 1999 an average of $15,000 per member—of which, as I have stressed, some $13,000 is the clothing allowance and education benefits to the members themselves.

I have exceeded my limit, but I appreciate your tolerance.

[The statement follows:]

### PREPARED STATEMENT OF HARRIS WOFFORD

Mr. Chairman and Members of the Subcommittee, I appreciate the opportunity to appear before you today to review the Corporation's progress over the last year and to report about our plans for the future.

The total budget request from this Subcommittee for programs authorized under the National and Community Service Trust Act is $543,549,000. In addition to this amount, the Corporation is requesting a separate appropriation of $2,125,000 from this Subcommittee for the Office of the Inspector General. These funds would provide program support for approximately 25,000 AmeriCorps members through grants and the National Civilian Community Corps programs. (The President's proposed budget, assumes that there will be approximately 30,000 AmeriCorps members in fiscal year 1997, including those in the AmeriCorps*VISTA program. AmeriCorps*VISTA and the National Senior Service Corps are funded through the Subcommittee on Labor, Health and Human Services, Education, and Related Agencies.) This budget request also supports programs which affect more than 800,000 participants in the Learn and Serve America: K–12 School- and Community-Based and Higher Education programs; the National Service Trust; Innovation, Demonstration, and Assistance Activities; Evaluation; Program Administration; and the Points of Light Foundation initiated by President Bush.

These numbers don't come close to telling the story of national service. Neither, I'm very sorry to say, do most of the reports, charges, and arguments which we've all heard about national service. In fact, with everything I've learned since becoming Chief Executive Officer of the Corporation for National Service last October, I've concluded that the story of national service is still largely untold.

Since the President nominated me for this position, I've visited national service programs in some 20 states, and I have learned that this untold story of national service is comprised of at least three chapters.

First, national service is solving real problems with real results. AmeriCorps has proven to be a cost-effective use of public and private resources, especially in meeting the critical education, public safety, health, and environmental needs of children and youth. Learn and Serve America grants are helping school districts and communities engage youth in serving their communities and learning citizenship.

Second, national service is leveraging unpaid volunteers in communities across the country, and is working in productive partnership with traditional volunteer groups.

Third, national service is a model of reinvented government, committed to listening, adapting, and continually improving. Indeed, it is a unique public-private partnership which goes beyond government and is based predominantly in local organizations and the independent sector.

We have spent a great deal of time this year discussing the cost of fielding an AmeriCorps member. That is essential and must continue. But businesses which measure cost-effectiveness look not only at the cost of the operation but also at the value of the product delivered. There has been almost no discussion of the "products" produced by AmeriCorps.

The primary product of AmeriCorps is not giving young people an opportunity to further their education—although AmeriCorps has provided 45,000 opportunities for Americans to do just that, and we will support another 25,000 through the programs which will begin this fall.

The primary product of AmeriCorps is not teaching reciprocity—although the idea that a young American should give something to his or her country in return for aid is powerful and enduring, as it is for the GI bill which affords millions of veterans an education.

The primary product of AmeriCorps is not giving a rewarding experience to those doing service—although many AmeriCorps members have reported their year or two of intense service to be a life changing experience through which they gained essential qualities for productive workers and good citizens: discipline, a sense of teamwork, readiness for hard work, self-confidence and higher aspirations.

The primary product of AmeriCorps is not instilling an ethic of service—although there are already signs that those who give full-time service this year will give continuous service throughout their lifetimes, much as some returned Peace Corps Volunteers have done.

The primary product of AmeriCorps is not even bringing people of different backgrounds together in a common mission—although I am moved whenever I see service programs build bridges between races based on working together in a common effort.

Taken together, these by-products make national service a vital and worthwhile investment, but none of them is its primary product.

The primary product—and the primary purpose—of AmeriCorps (like that of all the Corporation's programs) is helping communities solve some of the critical problems of our country. In every state, service programs because they rely on the ingenuity of local citizens—have successfully tackled problems that have vexed communities for years.

The problems national service is helping communities to solve are not peripheral ones. They are some of our country's most intractable problems: educational decline, crime and drugs, violence, illiteracy, and homelessness. No issue we face is more important than our children's future.

More than half of all AmeriCorps members focus on the problems of children and youth. They tutor, operate after-school programs, work with gangs to reduce youth violence, and create safe havens so children can learn without fear—and they help organize students to engage in their own voluntary service to their communities. All of the Learn and Serve America: K–12 programs address educational needs of school-aged youth, and approximately 75 percent of the college students in the 98 Learn and Serve America: Higher Education projects serve to improve the school success of K–12 students. All of these programs recognize that the young are resources and talent to be tapped, not problems or threats. Serving the young is transformed into asking and enabling the young to serve.

One of four children—over 17 million youth—are estimated to grow up in single-parent homes. For minority children, the ratio is one of two.[1] A study on Big Brothers/Big Sisters which was completed this year by Public/Private Ventures found that well-structured, long-term mentoring programs have a significant impact on the lives of these children. Youths with mentors earned higher grades, were 52 percent less apt to cut school, and were far less likely to get involved with substance abuse. Little Brothers and Sisters were 46 percent less apt to start using drugs and 27 percent less likely to start drinking than peers who didn't have a mentor.

Big Brothers/Big Sisters sponsors programs in all of the Corporation's streams of service: AmeriCorps grants, AmeriCorps*VISTA, Learn and Serve America, and the National Senior Service Corps. Big Brothers/Big Sisters has found the presence of full-time national service participants to be precisely what it needs to help to recruit and train traditional volunteers. For example, the Circle Net Big Brothers/Big Sisters program in Detroit sponsors 20 full-time AmeriCorps members, who recruit and train a "Circle" of friends to support 100 developmentally disabled youths. In Philadelphia, Big Brothers/Big Sisters works with the Corporation's Learn and Serve America K–12 program to recruit 380 high-school mentors for at-risk elementary school students. More than 1,200 AmeriCorps Members are mentoring all across the country, and they have established approximately 9,000 mentoring relationships through direct service and by recruiting and training additional volunteers to serve in communities. For instance, the 15 members of the Salt Lake City, Utah, YOUTH FORCE AmeriCorps program are mentoring and tutoring 93 students living in low-income neighborhoods in Salt Lake City. The program also works with parents of the children to increase their involvement in their children's education. AmeriCorps members also started an attendance club for students with significant attendance problems and increased attendance by 85 percent.

Our demonstrable successes in meeting the needs of children and youth in California are no doubt one reason why Governor Pete Wilson turned to his state commission on national service—the California Commission on Improving Life Through Service—to help to implement the California Mentoring Initiative. Governor Wilson has called for 250,000 mentors for at-risk youth by the year 2000. From the Governor's perspective, service—particularly mentoring—is a key component of the response to the exponential growth of out-of-wedlock births and teenage pregnancy and the related welfare costs, juvenile delinquency, and violent crime by juveniles.[2]

National service has had similar successes meeting children's educational needs. In Alaska, the AmeriCorps members of the Rural Alaska Community Action Program (RurAL CAP) serve as aides in Headstart and child care centers to teach parenting skills—particularly to Native Alaskans. The AmeriCorps members sponsored by Alaska's Nine Star Enterprises instruct illiterate youths and adults and recruit and manage literacy volunteers who tutor approximately 1,200 individuals.

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[1] "Making a Difference—An Impact Study of Big Brothers/Big Sisters" Joseph P. Tierney, Jean Baldwin Grossman and Nancy L. Resch. Philadelphia: Public/Private Ventures, November 1995. Page 49.

[2] Executive Department, State of California. Executive Order W–130–96.

In Nebraska, 24 AmeriCorps members are serving in nine school districts across the state to teach peer mediation and conflict resolution to youth to reduce violent behavior. AmeriCorps members have trained 170 youth as peer mediators, mediated one-on-one with 275 youth, and conducted workshops on peer mediation for 1,000 teachers, administrators, parents and community groups. All told, 3,200 youth have been introduced to the basic techniques of peer mediation.

In rural northeast Vermont, the 25 AmeriCorps members of the Northeast Kingdom Initiative sponsored by Lyndon State College help at-risk youth with independent living projects. They also tutor children and adults in math, science, writing and literacy, environmental education, and computer skills. The AmeriCorps members have recruited over 200 youths to participate in group activities including the 4–H Spaces program, help the elderly to remain independent, develop classes for Alzheimer and Dementia patients, and assist with community development projects.

In my home-town of Bryn Mawr, Pennsylvania, Harcum College's Parents And Children Together (PACT) program recruits and trains inner-city parents to volunteer as tutors in their children's classrooms. Supported by a grant from the Corporation's Learn and Serve America Higher Education program, the parents matriculate into Harcum College's Early Childhood Education Program and receive 12 credits in exchange for their service. This year, 54 parents served in their children's schools (most of which qualified for Chapter 1 funds), providing 480 at-risk children with 6,000 hours of individual tutoring. In five months, 89 percent of the bilingual students tutored improved their reading skills by an average of almost one full grade. This year, PACT aims to build on its successes by developing the reading and parenting skills of the tutors themselves, enabling 40 percent of the parents to secure better employment in the community, and 15 percent to pursue further education.

Last fall, the Concluding Report of the Carnegie Council on Adolescent Development—whose members include Senators Inouye, Jeffords, and Kassebaum—stated that:

> Among the most powerful means of enriching young lives is to enlist their energies in improving their own communities. Young adolescents can and want to contribute to their communities, and they learn much from such engagement. Aside from experiencing the rewards of service to others, they learn skills and develop habits that will serve them well in the world of work. They learn about the importance of collaborative problem solving when teams work together to achieve group objectives; about the importance of being prompt, courteous, and cooperative; and about the inevitable necessity of patience and persistence in pursuing long-term goals * * *. When programs encourage young adolescents to participate in community life as valued resources, they enable young people to become stakeholders in the community's values, traditions, and accomplishments. Adolescents with such a sense of belonging are more likely to choose positive career paths to achievement. Their self-efficacy grows as they see their contributions bear fruit. Adolescents often adopt as role models the adult leaders who help them build their own futures.

The Learn and Serve America programs have accomplished these results. From college students who tutor middle school students to high school students who train candidates to become American citizens, the programs are developing better citizens and healthier communities. For example, with the support of Learn and Serve America, Colorado's Southern Ute Tribe has developed a program in which schools provide environmental and other service programs for the community's families. Working with the school districts, local universities, the Colorado Department of Education, and community organizations, participants have developed a scenic trail and done landscaping in local parks, volunteered at a senior center, and created intergenerational programs.

National service also contributes to improvement in the health of children. The 44 AmeriCorps members of the Enhancing Neighborhood Action By Local Empowerment (ENABLE) program sponsored by the University of Maryland at Baltimore provide home health assessments and outreach education to needy residents of Sandtown-Winchester, a federally designated Empowerment Zone. ENABLE-AmeriCorps members provide the Home Instruction Program for Pre-school Youngsters (HIPPY) curriculum, which teaches parents about early childhood health issues to 90 households with children under three. The AmeriCorps members also teach local residents who have hypertension and diabetes about better health habits and keep them connected to the health-care system.

A unique partnership between the National Council on Aging and the Christian Children's Fund operates an intergenerational AmeriCorps program in Jackson, Mississippi, the impoverished Hidalgo and Cameron counties in South Texas, and on the Rosebud Lakota Sioux Reservation in South Dakota. By September 1996, 75 AmeriCorps members who are senior citizens will have immunized nearly 4,000 children, and more than 3,000 families will have learned the benefits of preventive health care. Each dollar invested in immunization saves $14 in future medical and hospital costs.

Through a Learn and Serve America grant, Northeastern University, Boston University, Boston's Department of Health and Hospitals, and 12 neighborhood academic centers are engaging nursing and health profession students in full-time service during the summer and in part-time service during the school year. Students provide health screenings and health education materials and they make presentations at local schools and community centers on smoking cessation, asthma, and violence prevention.

National service also makes communities safer for children and other residents. Hundreds of AmeriCorps and Learn and Serve America programs address the public safety needs of children and their communities through safe haven and safe corridor programs, block watches, and by improving school safety.

For example, in Kansas City, Missouri, AmeriCorps members worked for the last two years with the Police Department to mobilize the Blue Hills community to fight neighborhood crime. As a direct result of their work, 44 crack houses were closed, a city park was taken back from gangs and 175 city blocks were kept free from drug dealers. Police Chief Steve Bishop credits AmeriCorps with contributing to a 15 percent decline in crime in the affected neighborhood. He says, "The drug pushers and users were driven out and working families returned. For the first time in five years, Brooklyn Park was the site of neighborhood picnics and family fun—where there had once been gunfire."

There were thousands of other national service success stories this year. Aguirre International, an evaluation firm headed by President Ford's Commissioner of Education, surveyed a sample of projects and quantified what I have seen in states across the country. They found:

—In Texas, 99 AmeriCorps members recruited 468 volunteers to serve as tutors or in other educational capacities. These tutors worked to assist students with literacy problems and mentored students during the summer. The programs noticed increased retention as one of the results of their work.

—In Texas, 127 AmeriCorps members taught 6,544 children in grades 1–12. One program reported as much as a 40 percent increase in performance, and continued participation in learning development after the program had terminated.

—One hundred eighteen Texas AmeriCorps members worked with 1,095 parents on parenting skills as well as issues of health and school success. One program, for example, organized and held family math, science, and literacy workshops which were found to both improve skills and attitudes in these areas.

—Forty three Texas AmeriCorps members assisted 5,267 community members to gain access to health care, including emergency needs and longer term issues.

—In Alabama, 22 AmeriCorps members taught and mentored 350 children in Head Start classes, and worked with their parents on strategies to facilitate their children's academic success.

—Also in Alabama, 58 AmeriCorps members served with 109 elderly with limited mobility to allow them to receive home-based health care.

—In Maryland, two AmeriCorps members worked with 119 students and their teachers to improve students' learning.

—Twenty-one Maryland AmeriCorps members mentored 204 high school students. As a result, their academic productivity increased.

—In Colorado, 24 AmeriCorps members recruited 415 volunteers to tutor and provide other assistance to schools.

—Also in Colorado, 23 AmeriCorps members provided out-of class enrichment to 311 students, including providing 2,000 library books to the homes of 251 children who had no books.

National service has succeeded in many communities, but it is important to recognize one overarching conclusion: independent evaluators have repeatedly proven that national service yields a positive return on investment. Several studies this year, including one sponsored by three independent foundations, confirmed that investments in national service programs are sound, yielding from to $1.54 to $3.90 of benefits for every dollar invested.

Researchers in Washington State who examined AmeriCorps tutors in Lake Chelan showed that as a result of AmeriCorps, 146 of 149 remedial students achieved more in academic performance than peers who were not exposed to AmeriCorps members. Almost as many students increased their interest in school. A team of scholars from the University of Minnesota examined the Youth Works AmeriCorps (YWA) program and found that, in addition to the positive cost-benefit ratio, the Youth Works program created "a culture of cooperation and collaboration. In case after case, in community after community, YWA became a catalyst for people to work together to find new ways to solve problems." The evaluators also reported that "organizations became more aware of the services and operations of their counterparts and associates in the community, thus enabling them to avoid duplication and to improve the quality of service delivered."

Forty-three AmeriCorps members in Project FIRST, sponsored by IBM and the Fund for Public Education, are working with parents, teachers, and staff in New York City, Atlanta, and Charlotte schools. AmeriCorps members have provided over 9,240 hours of school-based technology and staff development planning to help schools better use the technology they already have; secured and refurbished 1,200 computers and pieces of technology donated from the corporate community; and fostered strong links between schools and communities. As a result, these school children have access to new resources in their classrooms and computers have been integrated into their curriculum. When the IBM International Foundation asked four conservative "Chicago School" economists to analyze the return on their investment, they found a minimum benefits of $2.36 to $2.52 for every dollar AmeriCorps put into the program, and cautioned that this undoubtedly underestimates the total benefits to individuals and society. Stanley Litow, President of the IBM International Foundation, summed up his company's satisfaction by stating, "IBM expects a return on investment, and it bases its funding decisions on demonstrable results * * *. This program works."

The 42 AmeriCorps members sponsored by the Birmingham, Alabama, AIDS Outreach program provide care to mainly indigent people in the final stages of AIDS. AmeriCorps members are certified as home health aides before beginning service. The local public hospital estimates that this service saves thousands of public dollars for each client who remains in his or her home instead of being hospitalized in the last weeks before death.

A study of the Learn and Serve America: K–12 completed by Brandeis University and Abt Associates concluded that "on average, the programs in the intensive study sites produced about $3 in direct community benefits for every dollar in program costs. This figure does not include the value of participant impacts and indirect benefits to the community (e.g. new partnerships, changes in community attitudes, support for youth, etc.) which were the primary targets * * * and would represent additional returns on the investment."

Successes like these have earned national service a chorus of support from a wide variety of individuals and institutions, including foundations and the private sector, institutes of higher learning, and many governors—including Republican governors.

For example, the Ford Foundation made a challenge grant of three million dollars to create a two-pronged strategy to strengthen national service. In the first part, Ford focuses on community-foundations which support AmeriCorps locally. Money raised by them is matched by Ford, further increasing the ability of local leaders to show their support for national service through their pocketbooks as well as their words. In the second part, which will begin this summer, Ford will offer support to strengthen national service programs involving minority young people.

Similarly, the General Electric Fund, the primary philanthropic vehicle for the General Electric Company, has provided $250,000 in matching funds to AmeriCorps. Working with the United Way of America and local United Ways, GE made grants to non-profit organizations sponsoring 17 AmeriCorps programs in ten states, including Connecticut, Indiana, Massachusetts, North Carolina, and Ohio. In 1996, the GE Fund is renewing its investment in national service and will provide another $250,000 in matching funds to community-based AmeriCorps sponsors. Clifford V. Smith Jr., President of the General Electric Fund, says that "the AmeriCorps/GE Fund/United Way of America partnership has been a complete home run. We've seen the results in local communities; together, we are changing lives."

Several groups support higher education through national service. In Rhode Island, Lawrence K. Fish, Chairman and CEO of the Citizen's Financial Group, led a group of the state's college and university presidents who pledged this year to double the national service education award for AmeriCorps members who complete their commitment to service and are admitted to their schools. Mr. Fish led this effort because he feels that, "AmeriCorps members have gotten results—good results that are measurable. You can see the results on paper and you can see them on the faces of children getting their first A's and adults reading for the first time * * *. The smart money is on AmeriCorps."

With a Learn and Serve America grant, Morris Brown College in Atlanta operates service learning and volunteer sites at a local Veterans Hospital, the Sickle Cell Foundation, the Boy Scouts of America, Zoo Atlanta, and many local elementary schools. In honor of Morris Brown College's strong commitment to service in its community, the United Parcel Service awarded the college $100,000 in scholarship money to assist students with tuition so that they have more time to continue their service.

UPS has also teamed up with Hands on Atlanta, a project thorough which 77 AmeriCorps members are mentoring and tutoring low-income students in three Atlanta elementary schools, developing and managing safe havens and other after-school programs, and recruiting and coordinating community volunteers to increase program resources. From October through December of 1995 alone, Hand on Atlanta AmeriCorps Members leveraged 567 community volunteers who provided 1,875 hours of service.

To more closely connect the Corporation's various streams of service, we have launched several Local Collaboration Initiative demonstrations in which AmeriCorps members, seniors, and students engaged in school-based service work together to maximize the Corporation's human resources. In Texas, the SERVE Houston Youth Corps, a successful AmeriCorps program with significant private- and independent-sector support including cash and resources from the Enron Corp., Exxon, the Shell Oil Company Foundation, and Tenneco Energy, has joined with other streams of service to manage a collaboration to deliver a family literacy program to elementary schools in five low-income Houston neighborhoods. AmeriCorps will build on the foundation of SERVE Houston's after school project to offer high school youth leadership projects, parent literacy programs, and summer activities for parents and children. Services will be provided to the entire family of at-risk children to address the multiple barriers many of these families face as they try to raise their school-aged children.

The Association for Utah Community Health is bringing AmeriCorps, Senior Corps, and Learn and Serve America participants together through a Local Collaboration Initiative to help the state reach its goal of immunizing 90 percent of Utah's two-year-olds. The program includes community volunteers who help identify the children to be vaccinated. It will also recruit high school and college students to supervise children at health and immunization fairs, as well as retired doctors and nurses to administer the immunizations.

Ohio University's "Appalachian Access" AmeriCorps program has entered into a partnership with another AmeriCorps*State grantee, a Learn and Serve America: Higher Education grantee, a Retired and Senior Volunteer Program (RSVP) sponsor, and an AmeriCorps*VISTA sponsor to expand access to health care in 21 counties in Southern Ohio.

The Corporation has offered the nation's governors extra national service education awards to use to advance their respective agendas. Twenty states have taken us up on these Governors' Innovative Program grants. In addition to Governor Wilson's goals for mentoring, AmeriCorps members are supervising and mentoring youth who must complete community service hours under court order in Maryland. In Vermont, AmeriCorps members are assisting the elderly, the disabled, and the residents of rural areas of the state who do not have adequate heat in winter months by identifying sources for fuel assistance, weatherizing homes, and recruiting community volunteers to provide them regular assistance. Governor Howard Dean strongly supports this project. In Colorado, ten AmeriCorps members are serving in local child care resource and referral agencies to increase the quality and availability of child care. The AmeriCorps members are recruiting child care providers, identifying their training needs and linking them to appropriate training, and providing existing child care providers with information about training opportunities and new licensing requirements. This project is part of Governor Romer's plan to build more community support into Colorado's child care system.

AmeriCorps members are helping to bolster Governor Pataki's strong commitment to solving the problems of violence in New York's schools. In Michigan, Governor Engler has AmeriCorps members serving in county social service offices to connect welfare families to health services, immunize children, enroll clients in managed care programs, and conduct health screenings. In Washington State, AmeriCorps members are addressing the development needs of youth in foster care to combat low self esteem, unsatisfactory school performance, and social maladjustment as part of the priority Governor Lowry has put on these issues. Activities include after-school help with homework, group functions, weekend trips, and athletic activities. In Mississippi, AmeriCorps members are serving at ten universities—half of which are Historically-Black Universities, to create campus service centers from which they recruit students, faculty, and staff to tutor and mentor youth. They also make the resources of the universities available to under-resourced public schools and communities. This effort is closely tied to the Governor Fordice's priority to improve the state's public education system and improve the academic performance of disadvantaged children.

Special efforts like these to increase local participation in national service prompted Governor Bill Weld to declare while swearing in AmeriCorps members last fall that "now that we have a Republican Congress that is finally serious about getting America's house in order I have only one word of caution—AmeriCorps. This is the baby that shouldn't be thrown out with the bathwater. AmeriCorps members will help us build a better tomorrow * * * one of the most intelligent uses of taxpayer dollars ever." Last month, Governor Weld reiterated these beliefs in letters to Senator Dole and Speaker Gingrich which are submitted for the record.

In recent months, the Corporation has made extra efforts to seek the input and advice of mayors, and to put the service of the Corporation's programs and AmeriCorps members to use in carrying out the community strategies developed by mayors and local leaders. In several cities, mayors have coordinated the activities of the community's Learn and Serve America, Senior Corps, and AmeriCorps projects. Other mayors have challenged full-time national service corpsmembers to recruit and coordinate hundreds of local citizens in one-day service blitzes, cleaning up neighborhoods and repairing schools and community centers. In April, President Clinton nominated Victor Ashe, Mayor of Knoxville, Tennessee, to serve on the Corporation's Board. As you may know, Victor Ashe has been Mayor of Knoxville since 1987; served six years in the Tennessee House of Representatives and nine years in the State Senate; is the immediate past president of the U.S. Conference of Mayors; serves on the advisory board of the National League of Cities; is First Vice President of the Tennessee Municipal League; and was one of President Bush's appointees to the Advisory Committee on Intergovernmental Relations (President Clinton re-appointed him). Mayor Ashe will bring a wealth of experience in solving problems locally to national service.

National service participants are as varied and diverse as the communities in which they serve. From school children through seniors we demonstrate on a daily basis that people everywhere—from suburbs to cities to rural communities—can serve. According to preliminary figures for the second year of the AmeriCorps grants programs and the NCCC, approximately half of AmeriCorps members are white, 31 percent are African American, 14 percent are Hispanic or Latino, 4 percent are Native American, and 3 percent are of Asian or Pacific Islander heritage. These figures are very similar to the breakdown of the first year of AmeriCorps which we reported to the Congress last July.

AmeriCorps also expands opportunity in exchange for responsibility for the broad middle class. In the first year of AmeriCorps, more than half of all members came from households with annual incomes between $20,000 and $70,000, and 54 percent came from households with annual incomes of less than $30,000. (The Corporation does not currently have comparable information for the second year of AmeriCorps.)

Participants in Learn and Serve America: K–12 break down similarly: slightly less than 67 percent are white and 33 percent are African American or Hispanic, and they come from different economic backgrounds (21 percent were economically disadvantaged).

Finally, I want to call your attention to what is happening just a few blocks from Capitol Hill. AmeriCorps*NCCC members are repairing and renovating 297 apartments and common areas at the Arthur Capper Senior Housing complex. The complex, which is in receivership, has not been renovated for over a decade. AmeriCorps members have been dry-walling, painting, exterminating pests and visiting with the residents, who are disabled individuals or senior citizens. When I visited the project, a blind resident told me how the AmeriCorps members had helped her clean her vermin-infested apartment after social workers and others neglected her. An article about this project in the Monday, April 29th *Washington Times* detailed what the AmeriCorps members told me: that they were succeeding with real results where other government initiatives had failed. I would like to invite all of you and your colleagues to visit this successful project or others in your states.

## LEVERAGING VOLUNTEERS

The second chapter of the untold story of national service focuses on our success in recruiting, organizing, and otherwise leveraging unpaid volunteers and working with traditional nonprofits. When AmeriCorps was first created, there was some concern that full-time stipended service would undermine traditional volunteerism. The opposite has been true. AmeriCorps has developed close working partnerships with volunteer groups and has, in many cases, helped them do their jobs better.

Initially, the proposition that government programs could help non-profit volunteer programs work better was greeted with skepticism. One such skeptic was Millard Fuller, founder and President of Habitat for Humanity International. He was suspicious about joining up with AmeriCorps. Today, he is a strong supporter because he has seen how AmeriCorps increased the number and efficiency of Habitat's traditional volunteers. In Miami, 23 AmeriCorps members sponsored by Habitat for Humanity worked with local residents recovering from the hurricanes which had left them homeless. The AmeriCorps members recruited, trained, and worked alongside local volunteers from—1,500 college students who came to Miami to spend their spring breaks serving, to thousands of professionals helping on weekends to senior citizens pitching in afternoons. With AmeriCorps members' help in leveraging this surge of volunteer service, 31 working families have moved into new homes and another 40 additional homes have been framed. I visited a North Philadelphia Habitat site and saw how AmeriCorps members helped to transform what had been a weekend project for suburban volunteers into an all-week effort involving many more students and adults from the neighborhood. According to Mr. Fuller:

> "As AmeriCorps members gain in construction skill our Affiliates are able to expand the number of occasional volunteers through increased capacity to supervise and manage volunteers. The first year of our partnership was an exciting and productive one especially highlighted by the Mother's Day Blitz build in which ten houses were built in a week here in Americus (Georgia). We at Habitat for Humanity look forward to our second year of participation in AmeriCorps as we move towards a vision of a world with no more substandard housing or homelessness."

Currently, 142 full-time AmeriCorps members are helping to build 200 single family homes in eight Habitat sites across the country including Baltimore, Maryland. Habitat is able to do this through its partnerships with local religious groups and private partners like Honeywell, Dow Chemical, National Gypsum, and the Hackett foundation. Michael Bonsignore, Chief Executive Officer and Chairman of Honeywell, Inc. explained, "I was proud to be in Americus, Georgia, to participate in the AmeriCorps*Habitat Blitz Build and to announce a new international partnership between Honeywell and Habitat for Humanity * * *. I had the thrill of working with AmeriCorps members and community volunteers on my first Habitat home * * *. We at Honeywell are delighted to join with AmeriCorps as partners in this important effort."

Many other leaders of traditional volunteer groups—most of whom receive no funds from the Corporation—have expressed similar sentiments. A year ago, as we began seeing the first benefits of national service, 24 leaders of volunteer groups such as the Association of Junior Leagues International, Independent Sector, the YMCA and the YWCA of the USA, the National Collegiate 4–H, and the Girl Scouts of the USA wrote to Members of Congress:

> "We are disturbed by the recent attacks on the national and community service program, and are especially concerned about the suggestion that this program undermines the work of voluntary organizations or subverts the voluntary spirit of the American people. On the contrary, we have found the national and community service program, including AmeriCorps, to be an enormously beneficial addition to the traditional voluntary sector. This program has not undermined our position, rather it has enhanced our efforts and strengthened our institutions."

These leaders reflected the sentiments which had been expressed earlier by Elizabeth Dole when, as President of the Red Cross, she advocated the passage of the National and Community Service Trust Act in 1993. Last year, Karen Goodman, the Red Cross's National Chairman of Volunteers, said, "We consider AmeriCorps to be a valuable addition to the voluntary sector and a means of broadening the pool of citizens who will have experienced the challenges and joy of community service. Stipended service neither undermines nor takes the place of volunteerism. It adds to the capacity of charitable organizations and is a means of attracting people into a lifetime of awareness of community needs through participation in intense and long-term service activities."

Today, there are 42 members of the AmeriCorps—Red Cross Rapid Response Team, and approximately 200 AmeriCorps National Civilian Community Corps members are ready to work directly with the American Red Cross's National Disaster Response Network. All have been specially trained in disaster response—including first aid, CPR, organizing services for large numbers of disaster victims, and family assistance—and are ready to respond to a disaster anywhere in the country within 48 hours. When the recent floods hit Pennsylvania, Maryland, and West Virginia, the National Disaster Response Network requested AmeriCorps' immediate assistance. I visited some of the 55 AmeriCorps members serving under the direction of the Red Cross in Pennsylvania at the end of January. I saw them managing emergency shelters and providing healthcare, food, and clothing to the injured and displaced. They also performed damage assessments for homeowners and operated the computerized information center which coordinated the deployment of thousands of community volunteers. The trained AmeriCorps teams also provided leadership for many of the volunteers who helped their neighbors cope with the disaster.

AmeriCorps also recently entered in a cooperative agreement with the Federal Emergency Management Agency (FEMA) to provide rapid-responses to natural disasters. Seeing the success of AmeriCorps working with FEMA last fall, FEMA Director James Lee Witt, wrote in an Op-Ed that:

> I know that Congress has a lot of tough choices, but I have also seen firsthand, at disaster sites across the country, the AmeriCorps getting things done. When you've been on the front lines, when you've seen these young people shovel sludge and mud out of the homes of elderly people, when you've seen members of AmeriCorps work hours on end to sort and distribute knee pads and clothing to rescue workers entering a devastated building—these are moments when you hope that Congress will endure and strengthen the national program rather than eliminate it * * *. Communities throughout this country need dedicated young people who are able to face crises in times of limited resources. AmeriCorps is a strong and hopeful investment in our future. We need to tell our young people that compassion and service are values that we admire and wish to foster. We need to tell our young people that helping others in our communities is important. AmeriCorps is too valuable to lose.

On April 24, 1996, at 10:00 PM, a five alarm fire necessitated the immediate evacuation of more than 400 residents of the New Jefferson Arms Senior Home in St. Louis, Missouri. AmeriCorps members sponsored by the American Youth Foundation were on the scene immediately. Kenneth O'Neill, General Manager of the New Jefferson Arms wrote to President Clinton on behalf of his staff, explaining that:

> Despite the fact that many St. Louis agencies and private individuals offered their assistance in our time of need, we could not have been successful in our efforts without the 37 members of the St. Louis AmeriCorps Emergency Response team, under the direction of Bruce Bailey. I must admit that we were not very familiar with AmeriCorps. Based on our recent experience, we now have a clear understanding and great respect for your program. The AmeriCorps team provided a level of caring that went far beyond the call of duty. In addition to locating and delivering critical medications, they treated our seniors with respect and dignity. They became their friends and their confidants. They became an extension of our staff—literally overnight. AmeriCorps helped us turn a potential crisis into a very positive experience for our seniors.

The 120 AmeriCorps members sponsored by Volunteer Maryland serve as volunteer coordinators in over 30 agencies throughout the state of Maryland. Each AmeriCorps member develops volunteer programs, and recruit and manages hundreds of volunteers to meet locally-identified education, public safety, human, and environmental needs.

In a sample survey, Aguirre International found each AmeriCorps member recruited, trained, and supervised an average of 16 unstipended volunteers, and generated 246 hours of volunteer service. In all, these AmeriCorps members, who represent about ten percent of the total class, generated 669,369 volunteer hours. The projects sponsored by the 98 current Learn and Serve America: Higher Education grantees have leveraged the service of over 27,000 volunteers in addition to the students the programs directly engage. Several Learn and Serve America: K–12 programs generate volunteers as well; for instance, the Camp Fire Boys and Girls in Kansas City, Missouri, recruited 117 adult volunteers who help implement their program in New Jersey, Texas, Oregon, Alabama, and Pennsylvania.

During the current grant renewals, the Corporation is placing extra emphasis on the importance of AmeriCorps programs which generate large numbers of volunteers. With the encouragement of Senator Chuck Grassley and several other members of Congress, we are also expanding programs in which the Corporation provides education awards to those serving in traditional non-profits and religious groups, colleges and universities, and other institutions with the ability to provide living allowances.

## REINVENTING GOVERNMENT

The third chapter of the untold story of national service is how the Corporation for National Service has become a model of lean, decentralized, and responsive public-private partnership.

AmeriCorps is locally based. Most of the grant money goes to local non-profit groups. They are the ones who decide what service will be performed. They select, enroll, and administer all the AmeriCorps members in their programs. This applies to programs selected by individual states and the multistate programs run by national non-profits like the US Catholic Conference, the YMCA, or Habitat for Humanity through "national direct" grants.

AmeriCorps promotes competition. The state commissions on national and community service award grants to local non-profits based on a competition to find the most outstanding proposals.

AmeriCorps is non-partisan. By law, the state commissions are comprised of a balance of Democrats and Republicans. But I should point out that the commissions are appointed by governors—three-fifths of whom are now Republicans. The success of this program stems in no small part from the leadership of both Republican and Democratic governors.

AmeriCorps is results oriented. From its inception, the Corporation set out to measure success by outcomes as well as inputs. By that, I mean not just "numbers of tutors enlisted," but "reading scores raised." This is often hard to do, and many volunteer groups are not used to trying to measure success this way. It is our conviction that the only way to ensure that service and volunteering are truly getting things done is to have effective ways of measuring success. Our program officers, evaluation units, and state commissions have worked with the grantee programs to design such measures, and we have provided technical assistance to the programs to help them do this. We recently established a senior level working group to ensure that the Corporation continues to insure that taxpayer investment produces and measures real results.

The Corporation for National Service is cost-conscious as well as cost effective. We have always been committed to delivering the highest quality program at the lowest possible price. We have already reduced the real cost per member of AmeriCorps in the state grant program by seven percent. This year, we have made numerous changes to improve effectiveness and further reduce costs. In the renewal process currently underway, AmeriCorps National and State grantees with above-average costs are expected to cut costs by 10 percent. Programs have been asked to raise the local match for program funds from 25 percent to 33 percent in this summer's grant cycle to further reduce reliance on federal support. We are now developing specific targets to reduce our costs for all AmeriCorps grants in the next three years. We have already lowered the cost of the AmeriCorps National Civilian Community Corps as well, by cutting headquarters staff by 25 percent and campus staff by 30 percent, closing one base, and reducing living allowances by half. We have also eliminated the regional offices of the Corporation.

National service is responsive to its stakeholders. We have already adopted a policy that will give the states significantly more freedom in choosing the programs during the upcoming AmeriCorps grants competitions.

The Corporation eliminated grants to other federal agencies to operate AmeriCorps programs. Members in these programs were not working in Washington bureaucracies—they were serving in partnership with thousands of local non-profit groups, just like other AmeriCorps members. In many communities, particularly those in rural areas, local offices of federal programs were the only structure around which small, cash-poor community groups could coalesce into an effective team. After two years of sustained successes, however, they are more on par with the initiatives of other communities sponsored through the AmeriCorps*State and National grant competitions. We have encouraged the former local partners to compete on their own.

National service is a partnership. We require local programs to secure additional support from the private sector. In our first two years, the programs in which AmeriCorps members served raised $41 million from the private sector, $9 million more than the authorizing legislation required from all sources. For the upcoming program year, we require all of our programs to raise support from the private sector.

Despite our efforts to assure that all programs with Corporation support are models of excellence, not all programs met our high standards, so we and the state commissions stopped funding some of them. Fifty of the 350 first year AmeriCorps programs were not renewed—almost 15 percent of the total—a strong signal to programs of the value we place on quality.

The Corporation is committed to continuous improvement. The handling of the Corporation's financial management problems demonstrates our commitment to needed reform.

Late last year, the Corporation's Inspector General, based on work done by two independent accounting firms, found our fiscal year 1994 financial statements to be unauditable. During fiscal year 1994, as a start-up organization, the Corporation was faced with many tasks. ACTION, a predecessor organization, was merged with the Corporation in April, 1994. (AmeriCorps began in the last month of that fiscal year.) The Corporation was required to develop financial statements when none of the Corporation's predecessor organizations ever had to present their financial data in this manner.

While it is important to be aware of the perspective that these kinds of financial reporting difficulties are encountered by most Federal entities in the first years of attempting to produce auditable financial statements in a corporate style, we will not rest until our financial reporting and management are a model of public responsibility. We have a comprehensive plan to respond to the 99 recommendations made by the auditors. To date, we have implemented 46 of the 99 recommendations. We expect to complete another 15 by the end of June and a total of 82 should be completed by the end of the fiscal year. Several of the recommendations, most notably the replacement of the Corporation's accounting system (which was inherited from the old ACTION agency), will take some more time. We are nearing the completion of a long search for a permanent Chief Financial Officer and hope soon to have a nomination to the Senate.

I cannot emphasize enough how seriously I am taking this situation and these recommendations. I brought in outside accounting expertise and secured the advice of experts from the Office of Management and Budget. The Board of the Corporation is prepared to take whatever actions necessary to make the Corporation a model for Federal financial management.

Like any good business, we will make mistakes, but we will evaluate, correct, adapt, and improve. In the coming year, we are putting greater emphasis on addressing the needs of children and youth, leveraging traditional volunteers, expanding our partnerships with major non-profit and educational institutions, making more education-only grant awards, and reducing our costs per AmeriCorps member.

The country should be impressed and pleased by the bi-partisan way in which Senators have worked together to craft a compromise on fiscal year 1996 funds for national service. We recognize the priority many Members of Congress put in reducing the costs of the AmeriCorps program, and we have committed ourselves to reducing the cost of each AmeriCorps member. For program year 1997–1998, we will reduce the Corporation's budgeted average cost to $17,000 per member. For program year 1998–1999, we will reduce the Corporation's budgeted average cost to $16,000 per member, and for program year 1999–2000, we will reduce the Corporation's budgeted average cost to $15,000 per member. These figures include the education award, the Corporation's share of the living allowance and benefits, the grant for program support, and state commission and Corporation administration, training, recruitment and the like that is directly attributable to the AmeriCorps grants program, and they will be indexed for inflation. These numbers also assume that there will be funds appropriated to support no fewer that 25,000 AmeriCorps members.

I must also emphasize that these reforms—like national service itself—are being undertaken in the most "bottom-up" manner possible. We are working with our stakeholders—the Governor-appointed state commissions, local project directors, community partners, and the corporate and independent sectors—as well as concerned Members of Congress to find the best ways to meet the goals we share.

Mr. Chairman, if key aspects of the Welfare State are to be dismantled, and career bureaucracy is to be greatly reduced, the problems of education, neighborhood safety, health, and the environment will all remain. Our challenge is to find effective ways to solve these problems.

National service is a nonpartisan institution for all Americans. By drawing on the talents and energies of citizens and community groups, service does more than get things done. It helps to strengthen the building blocks of civil society: our families, neighborhoods, churches, and voluntary associations. Service increases civic participation and rebuilds the sense of community that is too often missing in our national life. A growing movement of policy-shapers from Robert Putnam to Benjamin Barber to William F. Buckley have called for new steps to build and strengthen civil society. Senator Dan Coats and William Bennett have proposed the Project for American Renewal to encourage citizenship and support the charitable sector. The ideas they explore are those which have guided national service, and the initiatives they advocate are what national service, in its various forms, is doing quietly, diligently, and effectively.

National service is an effective—and cost effective—way to solve problems. It reduces our reliance on government by mobilizing ordinary citizens to work through existing organizations to serve their communities better, more cheaply, and more responsively. Service programs provide resources to help local communities solve programs in their own ingenious ways. The untold story of national service is that it has proven itself able to tackle seemingly intractable problems such as the critical education needs of youth, and get a positive return on investment and support from diverse partners; strengthen the volunteer sector and leverage volunteers; and be a model of reinvented government—responsive and flexible.

I look forward to working with this subcommittee to make national service a program in which all Americans can take pride.

I will be happy to answer any questions you may have.

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## EXECUTIVE DEPARTMENT, STATE OF CALIFORNIA

### EXECUTIVE ORDER W–130–96

Whereas, California has a rich and proud tradition of encouraging service in our communities; and

Whereas, the impacts of service can be beneficial in solving community problems; and

Whereas, service can provide meaningful and lasting experiences for service participants, as well as those benefiting from service provided; and

Whereas, California has been a pioneer state in encouraging service through the creation of programs, such as the California Conservation Corps and Youth Service California; and

Whereas, California has created the California Mentoring Initiative to recruit, train, and place 250,000 mentors with at-risk kids by the year 2000; and

Whereas, California faces a crisis with the exponential growth of out-of-wedlock births and teenage pregnancy; and

Whereas, California spends $5 billion to $7 billion annually in welfare, Food Stamps and Medi-Cal costs for families begun by a teen parent; and

Whereas, children raised in single parent households are more likely to become juvenile delinquents, and in 1992, nearly 60 Californians were raped, kidnapped, assaulted, murdered, or robbed by juveniles each day; and

Whereas, mothers who began motherhood as teenagers are more likely to have been poor, remain poor, and to need welfare in the future, with half of California's welfare caseload consisting of recipients who became mothers as teenagers; and

Whereas, the California Commission on Improving Life Through Service was established in 1994, to coordinate federal community service funding as encouraged by the National and Community Service Trust Act of 1993; and

Whereas, the California Commission on Improving Life Through Service provides our state the opportunity to focus resources on solving social epidemics like juvenile crime, out-of-wedlock births, and teenage pregnancy;

Now, therefore, I, Pete Wilson, Governor of the State of California, by virtue of the power and authority vested in me by the Constitution and statutes of the State of California, do hereby reauthorize the California Commission on Improving Life Through Service (hereafter referred to as "the Commission") as follows:

1. Executive Order W–77–94 is rescinded in its entirety.
2. The Commission membership shall not exceed 25 members, and at a minimum, shall include as voting members the following:
    - A. a representative of the community-based agency or organization;
    - B. a representative of local government;
    - C. a representative of local labor organizations;
    - D. a representative of business;
    - E. a representative of a national service program;
    - F. an individual between the ages of 16 and 25, inclusive, who is a participant or supervisor of a service program for school-age youth, or of a campus-based or national service program;
    - G. an individual with expertise in the educational, training, and development needs of youth, particularly disadvantaged youth;
    - H. an individual with experience in promoting the involvement of older adults (age 55 and older) in service and volunteerism;
    - I. the Superintendent of Public Instruction.
3. The Government shall appoint ex-officio, non-voting members.
4. Members of the Commission shall serve at the pleasure of the Governor.
5. Commission members shall serve for no more than two, three-year terms.

6. The Governor shall appoint all vacancies to the Commission to serve the remainder of the term for which the predecessor of such member was appointed.

7. Commission vacancies shall not affect the power of the remaining members to execute the duties of the Commission.

8. No more than fifty percent plus one of Commission members shall be from the same political party, as required by federal law.

9. The Commission shall elect from among its voting membership a Chairperson, except that no one commission member shall serve as Chairperson for more than two years, and non-voting Commission members may not vote in the election of the Chairperson.

10. The First Lady of California shall serve as the Honorary Chairperson of the Commission.

11. The Commission members shall serve without compensation but may be reimbursed for travel expenses and receive a per diem in the same manner as employees intermittently serving the State.

12. As required by federal law, a representative of the Corporation for National and Community Service (hereafter referred to as, "the Corporation") shall serve on the Commission as an ex-officio, non-voting member.

13. The Commission members shall serve as "Ambassadors for Service" in their local communities to promote, support, and build service opportunities and networks and encourage service among all Californians.

14. Duties of the Commission shall include:

A. development of an annual state service plan, as required by federal law;

B. promotion of community service throughout the State;

C. establishment of public-private partnerships to promote service and to maximize federal, state, and local resources available for service opportunities;

D. evaluation and monitoring programs and activities funded under the state service plan;

E. recruitment and placement of national service participants;

F. development of a strategy by which health and child care benefits are provided to service participants, as required by federal law.

G. pre-selection of Subtitle C National Service programs, as defined in the National and Community Service Trust Act of 1993, and preparation of appropriate applications to the Corporation;

H. administration of the State's service grants program as defined under the state service plan;

I. coordination with other state agencies and volunteer service programs to ensure a comprehensive and integrated service system in California;

J. development of a statewide network of service programs that assists in building the capacity of new and existing community-based service organizations.

15. In developing the annual state service plan, the Commission shall give priority to service programs and opportunities that:

A. reduce juvenile crime;

B. reduce out-of-wedlock births and teenage pregnancy;

C. recruit, train, and place adult mentors with at-risk youth, especially young boys; and

D. encourage non-governmental entities, such as churches, businesses, and families, to address juvenile crime, out-of-wedlock births, and teenage pregnancy.

16. The Executive Director, the Deputy Director, and other key staff of the Commission shall be appointed by the Governor and shall serve at the pleasure of the Governor.

17. All state agencies and departments are hereby directed to cooperate with the Commission on carrying out its duties set forth herein and provide assistance within existing resources.

18. The Governor's Office of Child Development and Education shall provide in-kind office space and other appropriate assistance to the Commission within existing resources.

In witness whereof I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 8th day of February 1996.

PETE WILSON,
*Governor of California.*

Attest:

BILL JONES,
*Secretary of State.*

### LETTER FROM WILLIAM F. WELD

THE COMMONWEALTH OF MASSACHUSETTS,
*Boston, MA, March 26, 1996.*

Hon. ROBERT DOLE,
*Majority Leader, U.S. Senate,*
*Washington, DC.*

DEAR MR. LEADER: I am writing to express my support for the reauthorization of the National and Community Service Trust Act of 1993 (NCSTA '93) and for the continued funding of national service programs during the balance of fiscal year 1996.

I applaud the Congress for making serious choices about balancing the budget. Your courageous undertaking to eliminate the deficit and make sacrifices for the benefit of future generations demonstrate your commitment to citizenship and to the higher interests of the nation. I believe it is these very qualities of citizenship and self-sacrifice that young people are learning in national service programs. National service teaches young people that there is more to being an American than pursuing self-interest and that we all have responsibilities to our families, our communities, and our nation. In Massachusetts, our national service programs have also proven that initiatives which are partially funded by Washington, such as Boston City Year, need not be micro-managed by Washington bureaucracy.

I hope the Congress will continue its bipartisan commitment to national service this year and in the future.

Sincerely,

WILLIAM F. WELD,
*Governor.*

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*AmeriCorps Ethnicity 1995–96*

| | *Percentage* |
|---|---|
| Native American | 4 |
| White | 45 |
| African American | 31 |
| Asian/Pacific Islander | 3 |
| Hispanic/Latino | 14 |
| Other | 4 |

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AMERICORPS ETHNICITY

[In percentages]

| | Fiscal year | |
|---|---|---|
| | 1994–1995 | 1995–1996[1] |
| White | 47 | 45 |
| African American | 31 | 31 |
| Hispanic/Latino | 13 | 14 |
| Native American | 3 | 4 |
| Asian/Pacific Islander | 2 | 3 |
| Other | 3 | 4 |

[1] Based on April 1996 data.

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### LETTER FROM MILLARD FULLER

HABITAT FOR HUMANITY INTERNATIONAL,
*Americus, GA.*

Hon. HARRIS WOFFORD,
*CEO, Corporation for National Service,*
*Washington, DC.*

DEAR MR. WOFFORD: I am writing to congratulate you on your appointment as CEO of the Corporation for National Service. It was my pleasure to meet Eli Segal and I look forward to meeting you as well. Your wealth of experience will serve you well as you enter the delicate negotiations in the months ahead.

David McDaniels, Habitat's AmeriCorps Grant Director, and Scott Squeglia, our Grant Manager, were in attendance at the South and Atlantic Cluster meetings respectively. Each has told me of the references you made to Habitat*Americorps in your remarks and of how the partnership has significantly contributed to our house building capacity in participating sites. As you noted in your remarks, as AmeriCorps members gain in construction skills our Affiliates are able to expand the number of occasional volunteers through increased capacity to supervise and manage volunteers.

The first year of our partnership was an exciting and productive one especially highlighted by the Mother's Day Blitz build in which ten houses were built in a week here in Americus. We at Habitat for Humanity look forward to our second year of participation in AmeriCorps as we move toward our vision of a world with no more substandard housing and homelessness.

Let me close by extending a personal invitation for you to visit any of our Habitat*Americorps sites during your travels. I know that our program will feature at least two Blitz builds this year, with one in Savannah and another in Cleveland. I'll ask David to keep you informed as these plans become concrete.

Again, I wish to congratulate you on your appointment and to thank you for your years of public and community service.

In the spirit of a Building partnership,

MILLARD FULLER,
*President.*

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## LETTER FROM THE NATIONAL AND COMMUNITY SERVICE COALITION

*Washington, DC., April 6, 1995.*

DEAR MEMBERS OF CONGRESS: As representatives of the nation's volunteer organizations we write to express our support for the National and Community Service Trust Act of 1993.

Our organizations are engaged in meeting community and individual needs across the country every day. We are proud of our tradition and the work that we do. We are disturbed by recent attacks on the national and community service program, and are especially concerned about the suggestion that this program undermines the work of voluntary organizations or subverts the volunteer spirit of the American people.

On the contrary, we have found the national and community service program, including AmeriCorps to be an enormously beneficial addition to the traditional voluntary sector. This program has not undermined our position, rather it has enhanced our efforts and strengthened our institutions.

In the short time the national and community service program has been operating, we already have seen its positive impact. It is building low-income housing, teaching students to use computers, creating playgrounds from vacant lots, and cleaning up our rivers and streams. The national and community service program has been a source of talented, enthusiastic, energetic people, who might not have otherwise had the chance to serve. It has helped many small community-based organizations expand the quantity and quality of the services they offer. It is instilling a national ethic of civic responsibility among Americans of all ages. And perhaps most important, rather than replacing volunteers or diminishing volunteerism, we are finding over and over again that national service participants are helping draw more volunteers into service in communities across the country.

We all share the goal of helping to rebuild society and revitalize our communities—and we believe that the national and community service program is an important part of that effort. We urge you to join us in supporting this program.

Nancy Evans, President, Association of Junior Leagues International; Sara Meléndez, President, Independent Sector; Thomas M. McKenna, National Executive Director, Big Brothers/Big Sisters; Bishop Roy L.H. Winbush, Chairman of the Board, Congress of National Black Churches; Mary Rose Main, National Executive Director, Girl Scouts of the USA; Gen. Michael J. Dugan, U.S.A.F. Retired, National Multiple Sclerosis Society; David R. Mercer, Executive Director, YMCA of the U.S.A.; Horace B. Deets, Executive Director, American Association of Retired Persons; Richard Fitzpatrick, Executive Director, National Coalition for Homeless Veterans; Gordon Raley, Executive Director, National Collaboration for Youth, Ann Mitchell, Executive Director, National Council of Non-Profit Associations; Richard Schubert, President and CEO, Points of Light Foundation; Prema Mathai-Davis, National Executive Director, YWCA of the U.S.A.; Paula Van Ness, President, National AIDS Fund; Mary Burgan, General Secretary, American Association of University Professors; Daniel W. Merenda, President & CEO, National Association of Partners in Education, Inc.; Tommy P. Baer, President, B'Nai B'Rith International; Dr. Joan B. Campbell, General Secretary, National Council of Churches in the U.S.A.; Patricia Renner, President, National Association of RSVP Directors, Inc.; Maggie Fogarty, Assistant Executive Director, Catholic Network Volunteer Services; Katie Burnham, Executive Director, Society of Nonprofit Organizations; Mary Louis Schweikert, President, National Association of Foster Grandparents Program Directors; John Pribyl, President, National Association of Senior Companion Directors, Justin A. Wiebers, Executive Director, National Collegiate 4–H.

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## LETTER FROM ELIZABETH DOLE

AMERICAN RED CROSS,
*Washington, DC., July 9, 1993.*

Hon. WILLIAM D. FORD,
*U.S. House of Representatives,*
*Washington, DC.*

DEAR SENATOR FORD: The American Red Cross supports HR 2010, the National and Community Service Trust Act of 1993. We welcome your continued efforts to enhance opportunities for all Americans to serve their communities. We particularly appreciate the proposed act's strong emphasis on:

- —Renewing the ethic of civic responsibility;
- —Engaging locally based and diverse organizations in a system of service delivery that is both decentralized and nationwide;
- —Facilitating the replication of existing successful service programs; and
- —Providing service opportunities for both stipended and non-stipended participants and for persons of all ages.

We understand that community service is neither a panacea for the nation's problems nor a substitute for traditional volunteerism. However, your bill will enlarge the means by which individuals can make a difference in their community.

We look forward to the bill's passage into law and to the opportunity of offering more than one hundred years of Red Cross experience to its implementation.

Thank you for your leadership in this vital area.

Sincerely,

ELIZABETH DOLE,
*President.*

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[From the Miami Herald, Oct. 11, 1995]

## NEED HELP? CALL AMERICORPS

(By James Lee Witt)

The recent recommendation by Congress to eliminate the Corporation for National Service, better known as AmeriCorps, is a disservice to the American people. I know that Congress has a lot of tough choices, but I also have seen firsthand, at disaster sites across the country, the AmeriCorps getting things done.

When you've been on the front lines, when you've seen these young people shovel sludge and mud out of the homes of elderly people, when you've seen members of AmeriCorps work hours on end to sort and distribute knee pads and clothing to rescue workers entering a devastated building—these are the moments when you hope that Congress will endorse and strengthen the national program rather than eliminate it.

We at the Federal Emergency Management Agency have had the opportunity to work with the AmeriCorps around the country—from the rubble of California's Northridge earthquake to the flooded streets of Houston, from the bombing site in Oklahoma City to the flooded neighborhoods of New Orleans. We have seen and have been inspired by the hard work that makes AmeriCorps one of this country's most valuable public initiatives.

### MEMBERS ARE COMMITTED TO HELPING OTHERS

The 350 local programs that host and direct AmeriCorps activities in our cities, towns, and rural areas—local chapters of United Way, Habitat for Humanity, the Red Cross, the Salvation Army—know that AmeriCorps works and works well. AmeriCorps members make a specific commitment to help others and to serve their communities.

—During the flooding in Houston last October, 24 members from AmeriCorps/Serve Houston worked for six weeks with our community relations staff, going door-to-door to contact residents of 1,300 households who needed special attention. I saw the physical (wall scrubbing, cleaning, etc.) and emotional comfort that they gave to elderly residents.

—Following the flooding in Louisiana last spring, 50 AmeriCorps members worked with the Red Cross and FEMA to provide mass care for the affected residents.

—After the tragic bombing in Oklahoma City, and before we even requested their help, a dozen AmeriCorps members from St. Louis arrived to assist us in our work and were soon supplemented by AmeriCorps members from Oklahoma. They helped set up the best donations program in FEMA's history. Given the incredible outpouring of help from the city and around the country, this was a huge job. Working around the clock, the young AmeriCorps people set up eight donation sites.

### PROMOTE COMPASSION, SERVICE

It is a big help to disaster victims to work with motivated, self-sufficient young people who will be in the community long after TV cameras have been turned off and interest has flagged.

Through their community service, 20,000 members, young people from mostly hard-working, middle-income families, earn money to help pay for college. And who knows? These AmeriCorps alumni may some day be working for FEMA, or they may be part of the team of emergency management professionals in your community—professionals with invaluable experience and uncommon dedication. Communities throughout this country need dedicated young people who are able to face crises in times of limited resources.

AmeriCorps is a strong and hopeful investment in our future. We need to tell our young people that compassion and service are values that we admire and wish to foster. We need to tell our young people that helping others in our communities is important. AmeriCorps is too valuable to lose.

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### AMERICORPS FUNDING—AUTHORIZED VS. APPROPRIATED

[In millions of dollars]

| | Funds authorized fiscal year— | | |
|---|---|---|---|
| | 1994 | 1995 | 1996 |
| Funds authorized but not appropriated | 15 | 130 | 391 |
| Funds appropriated—final | 285 | 370 | 309 |

Note: Appropriations for AmeriCorps from 1994–96 total $964 million—$536 million (36 percent) below the agreed upon levels in the National and Community Service Trust Act of 1993.

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### COST CUTTING ACTIVITIES

Eliminated grants to Federal agencies (fiscal year 1996)

Raised required match from grantees from 25 percent to 33 percent (fiscal year 1996)

Above average cost programs must cut by 10 percent (fiscal year 1996)

State grant programs reduced by 7 percent (fiscal year 1995)

NCCC: Closed Aberdeen campus; living allowance reduced from $8,000 (fiscal year 1995) to $6,000 (fiscal year 1996) to $4,000 (fiscal year 1997)

Federal administrative costs cut by over $7 million (12 percent) in fiscal year 1996

Plan under development to do "Education Award Only" programs

### AMERICORPS PARTNERS IN GETTING THINGS DONE

1. American Lung Association[1]
2. American Red Cross[1]
3. The Arc of the United States
4. ASPIRA Association, Inc.
5. Association of Farmworker Opportunity Programs
6. Big Brothers and Big Sisters[1]
7. Boston University of Public Health
8. Boys and Girls Clubs[1]
9. Child Welfare League[1]
10. City Year
11. The Enterprise Foundation
12. Girl Scouts[1]
13. Habitat for Humanity
14. HIPPY USA
15. I Have a Dream Foundation
16. Kansas City Consensus
17. Magic Me America
18. March of Dimes
19. Mid-Atlantic Network of Youth and Family Services
20. National AIDS Fund
21. National Alliance of Veteran Family Service Organization
22. National Association of Child Care Resource and Referral Agencies
23. National Association of Community Health Centers
24. National Center for Family Literacy
25. National Council on the Aging/Christian Children's Fund
26. National Council of the Churches of Christ in the USA
27. National Council of Educational Opportunity Association
28. National Council of La Raza
29. National Organization for Victim Assistance
30. New York University
31. Northeastern University
32. Notre Dame Mission Volunteer Program
33. Public Allies
34. Public Education Fund Netwok
35. Shriver Center/University of Maryland Baltimore County
36. United Cerebral Palsy[1]
37. United Way[1]
38. University of Texas at Austin
39. US Catholic Conference
40. Woodrow Wilson National Fellowship Foundation
41. YMCA (local chapters)[1]
42. YMCA of the USA
43. YouthBuild USA
44. Youth Volunteer Corps of America

[1] National Non-Profit Partners.

### CUTS IN THE VETERANS ADMINISTRATION

Senator BOND. Thank you very much, Senator Wofford.

Let me just begin. Senator Wofford, what do you make of the fact that the President has proposed a 35-percent increase in this program for next year but in the same budget submission has proposed cutting veterans programs 25 percent over 6 years?

Mr. WOFFORD. Senator, as a World War II veteran who went through college on the GI bill and has yet to rely on the veterans medical programs but may some day have some wish to do so, I am obviously concerned with cuts in veterans programs.

On the other hand, having once been in the midst of health care reform issues, I know there are probably ways in which the Veterans Administration could organize even more effectively for better service. As we are doing and making AmeriCorps more cost effective, there may be ways in which the medical programs of the VA can be made more cost effective and maintain quality.

I have no knowledge of what the out-year proposals are for the Veterans Administration. We are dealing with this year's appropriation, and I do not think there is any such substantial cut in this year's appropriation of the Veterans Administration.

I think on the merits, I have been making the case to you for a significant increase in AmeriCorps, as the Congress had planned when it authorized the 3-year plan for AmeriCorps. A significant increase is in order this year. As you have seen what we have done this year, we have worked with what Congress in its will gives us to work with, but we think we have proved ourselves in a way that can move forward to above the 30,000 corps member level. We are far, far behind where Congress originally scheduled us to be.

## NOT COMPELLING STUDENTS TO SERVE

Senator BOND. You have mentioned the President's directive at Penn State when he indicated that we should make service to community a part of every high school in America and a part of life of every dedicated citizen in the United States. Well, I would agree with the goal. My personal view is those decisions should be made by local school boards, parents, and the community not controlled by the Federal Government.

Can you tell me what direction you are going? Are you developing a plan to implement? What is to be your role in carrying out the President's suggestions in that Penn State speech?

Mr. WOFFORD. I agree with you, Mr. Chairman, that the directions the President pointed should not be directives. He would not agree with you that what he said in urging colleges and universities and school districts to do something was a directive. He did try to point a direction. It is the same direction that is in the preamble and purposes of the National Service Act of 1990 and 1993.

I think it is a widely shared aim. President Bush and all the Governors in Charlottesville in 1989 set as goal 3 that by the year 2000 all students in America should, among other things in goal 3, learn citizenship by engaging in community volunteer activities as part of school programs.

I do not favor this in any way and I am sure the President does not favor the Federal Government trying to compel students to do so. He said, "good for them," to school districts that have taken the lead on this.

Senator BOND. I just wanted to make sure that there was not to be some type of Federal directive, control, even incentive, or monetary involvement with it.

Mr. WOFFORD. Well, incentive and monetary involvement is a different matter. My assumption—and I have discussed it briefly with Secretary Riley—is that we need to get a working group of educators, Governors, and civic leaders to look at all three of the President's proposed directions.

One was that colleges and universities should fulfill the original intent of Congress for work/study money, which already exists, some $700 million a year, Mr. Chairman. Originally Congress said those work/study jobs should be in the community in public service organizations. The colleges and universities defined themselves as public service community organizations.

When I came to the Senate, I had a GAO report that found that 95 percent of work/study jobs were on campus. The President said if it is good for students to work their way through college shelving books and working in the cafeteria and the dean's office, would it not be even better or would it not be good for more of them to work in the community, something I have favored for 20 years. We actually got a bill through, with I think your help, that has a 5-percent requirement for colleges and universities to have at least 5 percent of the 700,000 some work/study jobs in community service.

At this point, the President has not proposed and I have not urged any further legislative action on it, but what he asked for is leadership from the colleges and universities. I would presume I would be part of helping, pursuant to the mission of our act, to get a working group of local leaders and educators to see how that might be encouraged.

He then, at the high school and middle school level, proposed that the schools that have committed themselves to making community service a part of their school, not necessarily as a mandate, be recognized. The District of Columbia, Maryland, a number of school districts have decided to have a certain kind of mandate for community service, but the President did not.

Senator BOND. Well, that is the point. I wanted to make sure that we were observing the distinction between encouraging serving as models. I happen to have a 15-year-old who is worrying and fretting over how best to fulfill his community service responsibilities at his school. That is something the school is doing.

I would raise a great deal of questions if we saw some conditions put on schools or even States to say that in response for receiving these Federal dollars, these are new requirements that you must undertake because I think that would come within the unfunded mandates provision.

I ask you to keep us advised on those because the goal is worthwhile, I think we all agree, but leadership and encouragement is a lot different from conditioning moneys or providing directives.

### PROPOSED SERVICE SCHOLARSHIPS

Mr. WOFFORD. Mr. Chairman, I need to make sure that I answered you properly. Aside from agreeing with what you just said as to no directives to school districts whatsoever and no State requirements being imposed from the Federal Government—I am sure the President agrees with you on that—the President did make one specific proposal to communities which is if civic organizations in a community or corporations or donors produced in each high school a $500 scholarship to an outstanding student who has given outstanding community service, the President said he would seek to match that as a national service scholarship. So, there would be a $1,000 scholarship. He pointed out that if every high school in the country raised that money in their community, it would be a $10 million Federal contribution.

I think that is within the province of our act. We have to work out the plans. We would keep you completely advised.

Senator BOND. I have no problem with that so long as there are offsets made elsewhere. Subject to the normal budgetary constraints, I would have no problem with that.

Let me turn to some more directly organic questions about the Corporation. We seem to have gone through the time rather quickly.

### GRANT-MAKING PROCESS

Senator Grassley and I last fall asked the Corporation's inspector general to look into the grant-making process used in 1994. We were concerned that the process had become politicized and that national direct grants in particular were being awarded on criteria other than merit.

Through this review, the inspector general discovered there were no written procedures in place to guide the Corporation in making grant awards. I found that shocking. For a Federal agency entrusted with millions of dollars in taxpayer funds, the lack of written procedures really reflected poorly on accountability.

I would like to follow up with you. Do you now have in place written procedures governing the grant-making process?

Mr. WOFFORD. Mr. Chairman, I would like to submit to you the written protocols for that process that are in force now, and in light of the inspector general's recommendations, we are now reviewing to see whether more comprehensive written procedures will be helpful. I can give you a detailed report of just what we have done. I have two single-spaced pages on what we have done in response to the recommendations.

Senator BOND. If you would submit those.

Mr. WOFFORD. We are trying to fulfill the objectives that she set.

Senator BOND. Did this occur during the 1995 cycle or has this just begun with 1996 grant awards?

Mr. WOFFORD. The 1996 cycle. On the national direct applications that you were immediately referring to, they are only renewal applications that went through a peer review process. We are just in that process at the moment in which the review process is being reported to me. I spent some hours on it, quite a few hours, in the last 10 days, and can assure you that I am convinced that in the appraisal of the renewal applications, for most cases, the third year program that won in the previous merit process, that the process is thorough and fair and completely unpolitical.

Senator BOND. There will be written justifications for decisions.

Mr. WOFFORD. There will, yes.

Senator BOND. One of the things that the report noted where the actual awards deviated from the peer review recommendations, where they deviated from the recommendations, this seemed to be a major source of concern, and I assume that now we can be assured that there will be thorough written justifications where there is deviation?

Mr. WOFFORD. There will be. If I am the source of any deviation from the recommendations that are being made to me, I will make it clear as to why. I have no reason to believe I will be at this time, but reserving that responsibility, I will see that it is well justified.

Senator BOND. Well, that is certainly within your authority and you will be responsible and accountable for it.

Mr. WOFFORD. Mr. Chairman, in addition to taking very seriously the inspector general's proposal for a comprehensive set of written procedures, she did say that overall she found that when the Corporation decided to award grants to lower rated applicants, it did so consistent with its methodology and the statutory and regulatory selection criteria governing competitive grant awards.

Senator BOND. Thank you.

Senator Mikulski.

Senator MIKULSKI. Thank you very much, Mr. Chairman and Mr. Wofford, for your testimony.

I believe that the three things that we need to focus on are mission, management, and money. I think the first thing we need to do is be very clear about the mission of national service, then the management to implement it, and then the right resources to carry out both.

Now, coming back to mission, mission was really to be able to meet certain needs, the needs of communities that are being tattered these days. The second was for the opportunity for young people to earn a voucher to reduce their student debt, and third, to also be able to leverage other volunteer work in the community.

Now, having said that, could we go to mission—because I believe if the taxpayer thinks they are getting their money's worth, they will be supportive of the program.

Could you tell me how national service in local communities leverages other volunteers?

I remember during the debate some of the national organizations themselves raised questions about whether we were paying volunteers, were they going to supplement the marvelous work, like Habitat for Humanity, which I have done volunteer work in myself and so on. Could you share with us whether we have displaced volunteers, that people only do it for money, or when we work with the local communities or national organizations like Habitat or Big Brothers and Big Sisters that I think we all so respect, has it leveraged other volunteers or has it displaced volunteers?

Mr. WOFFORD. The independent study on just that question reported—and we submitted it to you—that of the one-third of the programs that were studied, each AmeriCorps member leveraged—I am not finding the item, but I think——

## LEVERAGING VOLUNTEERS

Senator MIKULSKI. Well, just tell me what they did and tell me how they did it.

Mr. WOFFORD [continuing]. Sixteen per AmeriCorps member.

Habitat for America in north Philadelphia had been a two-person operation that had done fine, small work for years. In the 1980's I went and scraped walls and visited and have followed it over time. I went back after I was tapped for this job and now they had 10 AmeriCorps members, one-half of them from the community.

Senator MIKULSKI. So, they had 10 AmeriCorps members, but how did that leverage other volunteers for Habitat.

Mr. WOFFORD. I am about to tell you the story of how they did it. The same person, the director, who had been frustrated in trying to get this program moving to meet some of the tremendous needs in north Philadelphia, said, "It has transformed our program." For the first time now, it is not a program of some good suburban people coming in on the weekends to work with the sweat equity family, but scores of community volunteers had been recruited by the 10 AmeriCorps members living in that community. They have been recruited to work during the week. It is now a week-long program.

Senator MIKULSKI. Are you now saying that those volunteers recruited other volunteers?

Mr. WOFFORD. They recruited and they led them and they organized the teams and they got the sites ready. And they recruited students from the schools and they added community gardening, and turned vacant lots into playgrounds, play lots. And they organized an antigraffiti campaign. The director, who had been frustrated at the lack of full-time leadership to enable her to expand, described how many more houses they built.

May I submit for the record the letter from Millard Fuller, the founder of Habitat?

Senator MIKULSKI. I would like very much to do that.

Senator BOND. They will be accepted into the record.

[The information follows:]

### LETTER FROM MILLARD FULLER

HABITAT FOR HUMANITY INTERNATIONAL,
*Americus, GA.*

Hon. HARRIS WOFFORD,
*CEO, Corporation for National Service,*
*Washington, DC.*

DEAR MR. WOFFORD: I am writing to congratulate you on your appointment as CEO of the Corporation for National Service. It was my pleasure to meet Eli Segal and I look forward to meeting you as well. Your wealth of experience will serve you well as you enter the delicate negotiations in the months ahead.

David McDaniels, Habitat's AmeriCorps Grant Director, and Scott Squeglia, our Grant Manager, were in attendance at the South and Atlantic Cluster meetings respectively. Each has told me of the references you made to Habitat*Americorps in your remarks and of how the partnership has significantly contributed to our house building capacity in participating sites. As you noted in your remarks, as AmeriCorps members gain in construction skills our Affiliates are able to expand the number of occasional volunteers through increased capacity to supervise and manage volunteers.

The first year of our partnership was an exciting and productive one especially highlighted by the Mother's Day Blitz build in which ten houses were built in a week here in Americus. We at Habitat for Humanity look forward to our second year of participation in AmeriCorps as we move toward our vision of a world with no more substandard housing and homelessness.

Let me close by extending a personal invitation for you to visit any of our Habitat*Americorps sites during your travels. I know that our program will feature at least two Blitz builds this year, with one in Savannah and another in Cleveland. I'll ask David to keep you informed as these plans become concrete.

Again, I wish to congratulate you on your appointment and to thank you for your years of public and community service.

In the spirit of a Building partnership,

MILLARD FULLER,
*President.*

### HABITAT FOR HUMANITY, LEVERAGING VOLUNTEERS

Mr. WOFFORD. He has described how he turned from a skeptic who did not, in fact, support asking for AmeriCorps members, but seeing how they multiplied the number of houses, how they organized thousands of college volunteers during the spring break in Miami after the hurricane——

Senator MIKULSKI. We are going to try to get in a lot of questions.

Mr. WOFFORD. Yes.

Senator BOND. Good luck. [Laughter.]

Senator MIKULSKI. So, what you are saying is——

Mr. WOFFORD. Lots.

Senator MIKULSKI. No; because I think this is important. I remember Mr. Fuller, who I have just tremendous admiration for his tremendous innovation here with Habitat, being a great skeptic.

Mr. WOFFORD. You will see in his letters strong support now because we——

Senator MIKULSKI. So, having said that, then the question is how do they leverage other volunteers. Your answer is then they go to a community at the request of a real organization. Then the real organization trains the AmeriCorps volunteers who then recruit and train other volunteers while they themselves are doing the sweat equity. Is that kind of the conceptual framework of leverage?

Mr. WOFFORD. Yes; let me give you another——

Senator MIKULSKI. Now then, moving on, I would like to draw the distinction. We have capped Federal agencies, and I will talk about the national programs.

## PART-TIME SERVICE

I would like to then also go to another area where we are getting volunteers for less money which is the part-time model. During the debate—and Ms. Sagawa remembers this—the part-time model was my contribution. So much of national service was organized on a male model of a right of passage, of going away to find yourself in a new community. I was concerned, first of all, that many people cannot go away or should not go away, that many women want to stay in their own community. People who are disabled but want to contribute already have their networks.

Right now we have a high tech graduate at NASA, who is an Hispanic young man, who is organizing other Hispanic recent high tech graduates to be tutoring in the Hispanic community in Montgomery County. So, they see young, aggressive people who have made it helping them make it, but he could not leave NASA because if he did not use those skills, he would lose it.

That was the goal. That was the mission. I do not know if it worked, but it means, did it work, what are we doing with the part-time model? Because then, Mr. Chairman, we do not have to get into all these stipends. In other words, stipends are for the people who go away for 1 year a valid model, but then ours was to be a different model, almost more on a National Guard model.

Mr. WOFFORD. Senator Mikulski, I will give you a set of case studies, a comprehensive one, of how the part-time model is in so many cases working very well. George Washington University——

Senator MIKULSKI. How many part-time people do you have out of the 22,000 volunteers?

Mr. WOFFORD. If I could get Shirley Sagawa, our Executive Director.

Senator MIKULSKI. Maybe Shirley could help out. She remembers. Shirley, maybe you could help out.

Mr. WOFFORD. About one-third of our members are part time in a diversity of models. There has been some problem with retaining part-time members because they are working in other areas or they are students.

The George Washington University project has a substantial number of part-time AmeriCorps members who have organized hundreds and hundreds of students to work as tutors, mentors, and after-school assistants in the school districts of this city.

I have seen a number of the part-time models work very well.

Senator MIKULSKI. We would like to see the part-time model and I will say why. Rather than coming up with new programs which the chairman has given a yellow flashing light on—and I think the President's idea should be explored. Maybe it needs to be fleshed out a little bit more for this fiscal year. But the part-time model offers another way of having people in the community and will continue to live in the community. The whole idea is you learn it and you stay on, this is to teach a habit of the heart and the mind.

But this part-time model should be looked at as a way of saving money, increasing volunteerism, building roots in the local community where the people are going to stay and also be able to save costs in terms of the stipend model. I think we would like to look at those, see what are the success stories and where some of the potholes are, and maybe we could do that. But it is another way of looking at the leveraging idea.

Mr. WOFFORD. Yes; we are committed to making that work and about 7,000 now are in part-time models.

Senator MIKULSKI. Now, we have eliminated the national service working with Federal agencies and we are not going to rehash that.

## GRANTS TO NATIONAL NONPROFITS

There is a question of something called the national groups. Senator Bond and I also believe that national service is not to be a franchise model. Because as a former Governor and a social worker, we recognize the creativity and imagination are in the local community and national service should help meet local needs.

So, the question is why should we be funding national groups rather than going directly through the State commissions, again funding Big Brothers or Habitat, and at the same time having local control meeting local needs, tailor-made to that community, and also groups religiously based or so on. Could we talk about the national groups?

Mr. WOFFORD. Yes; if we are limited in time now, I would like to pursue it with you and Senator Bond later because the national nonprofit grants I think are tremendously important to the future of AmeriCorps. Habitat, your example, is a case in point. It is possible for each separate Habitat program to apply to a State commission, and in some cases that has happened.

But Habitat very much wanted as Habitat for Humanity, as an organization, to be able to take the responsibility of applying the state of the art of learning how this goes and working it as a whole in the Habitat system. That was the story of how Habitat has given leadership to this, has used that grant.

Many of these AmeriCorps partners, national nonprofits, work through the national nonprofit grant. The Red Cross. I commend to you the whole list.

Senator MIKULSKI. The list is an impressive group of people. Why can they not go through State commissions?

Mr. WOFFORD. A grant process, as you may guess, is a long, difficult process. The director of that little Habitat group in north Philadelphia—I assure you she did not have the time with a three-person operation. She did not have the time. It would be very hard for her on her own to go through that grant process. She was able to get 10 Habitat AmeriCorps members because her national organization had some 150—less than 200—AmeriCorps slots available for a number of different sites around the country. Most of those sites are small, and the national nonprofits have the capacity to organize that.

They also have to run a payroll. We do not select the members or administer the payroll, so that is a big burden to put on a two- or three-person operation in north Philadelphia. Habitat as an organization can handle it, and that is part of the case for each of these national nonprofits, such as Big Brothers, Big Sisters, or the Red Cross.

Senator MIKULSKI. Well, I think what we are looking for—because I see my red light is on—is this. First of all, I think we understand about the efficiencies. The groups that are the national groups are well known and so well respected.

What I am interested in is enabling efficiencies of scale, therefore, working with national groups, but not turning national service into a franchise model.

Mr. WOFFORD. Absolutely.

Senator MIKULSKI. Do you follow me?

Mr. WOFFORD. I am with you.

Senator MIKULSKI. So, that is No. 1 because I really do believe in the creativity and ingenuity of local groups that we do not even know. Particularly a lot of the youth groups fall in that category.

The second is I really do believe in Governors. I think Governors really do know their needs and know how to deploy. In my own State, now Governor Glendening oversees it, but it was under Governor Schaefer we brought in a western Maryland community where they really needed help. They do not like Government. They are really self-help oriented. But by doing it through volunteerism and leveraging other things, we have gotten so much done for the community and empowered people working again through a nonprofit church alliance which was then acceptable to the community on how services came because they saw it as community work and not charity work.

So, you see what I am looking for? So, one of the things we want to look for is how do we strengthen the State commissions, make sure the Governors are in charge of the bulk of the work being done in their State, efficiencies with the national group, allowing for the creativity and also the oversight. These Governors have to know who is in—when I say who is coming, I mean they need to know what is going on and have that hands-on relationship. Do you follow me?

## FURTHER DEVOLVING AUTHORITY TO STATES

Mr. WOFFORD. Yes; I follow you and I think we are following you. As you may recall, two-thirds of the grants go through the State commissions appointed by Governors where we have a built-in bipartisanship because three-fifths of the Governors are Republican, and most of them have been major supporters of the Corporation and its programs.

We have taken a step this year to see that any State that has a really functioning State commission with a good peer review process on its grant decisions, we will not second-guess them. We have taken a major devolution step in our grant process.

The one-third for national directs, which is related to these multistate programs—I would like to submit a report to you on why that one-third is very important. The two-thirds through the State commissions is also vitally important.

Beyond the question of the proportion of grants, we are asking the State commissions to take the leadership asked by the act to develop a State plan for the strategy of service in the State in which VISTA and the senior programs and all the streams of service that are related to the Corporation are considered. Working with our State offices, under the Governors' leadership, there is a State plan that the act calls for, and we are going to put a lot of effort into seeing that that idea of a State plan that coordinates all of this by the Governors takes place.

Senator MIKULSKI. Well, I think that——

Mr. WOFFORD. Maryland is one of the notable examples of an outstanding State commission.

Senator MIKULSKI. And I believe Massachusetts is one.

Mr. WOFFORD. Massachusetts, Missouri.

Senator MIKULSKI. One of the things John Kerrey and Governor Weld would agree on is that they like volunteerism.

What we are really looking for today is, unfortunately with our time, kind of taking a helicopter tour of what you have done.

I would like to just conclude by saying, first of all, thank you. I think you have taken the fiscal concerns that have been raised by our colleagues very seriously and we thank you for dealing with those issues. I think as we deal with the money and management issues, then people have more confidence in the mission.

## THE SEARCH FOR A CHIEF FINANCIAL OFFICER

Having said that, Mr. Chairman, if I could just ask one question, this goes to the money. One of the things that our colleagues and I agree with is the need for a chief financial officer, and we really need that so that they focus on the money and you can do the management mission. What is the status of that that seems to have been lingering around for some time? Could you tell us about that?

Mr. WOFFORD. It has been an active pursuit of mine from October when I was sworn in and for my predecessor before. Having recruited, as a college president, deans and others, it was difficult to get a chief financial officer to leave or to take the challenge of coming to us when they had read in the newspapers that both houses had zeroed us. It made it one of the more difficult searches I have ever been part of.

Nevertheless, we had outstanding candidates coming through our process, and thanks to the agreement that was worked out for funding for this year, that gave encouragement. We submitted a little while ago an outstanding candidate to the President who has to nominate. The President has approved the person. There are still the further steps that are taken before a name can be sent to the Senate. I hope that will happen soon, but we have made our selection.

Senator MIKULSKI. Well, that means they are going through all the clearances and so on.

Mr. WOFFORD. Right.

Senator MIKULSKI. When do you anticipate that the CFO can come on board?

Mr. WOFFORD. I hope that the process, because of that person's background, will be simplified and that we will move faster than might usually be the case. I believe Senator Kassebaum wants very much to move the nomination forward to the Senate as soon as possible when it comes. No one wants that process to be faster than I do.

Senator MIKULSKI. Well, thank you. I would like to again thank you for the work that you have been doing, Mr. Wofford. I would like to thank your team. I know that you, your team and also the people who have relied on this program like these national organizations lived through shutdowns. They were out there volunteering and doing work in blizzards. The work of FEMA in my own State and the volunteer effort was really wonderful particularly in that western Maryland area.

We went through 13 continuing resolutions and I think everybody really stayed the course, and I would like to extend my thanks to your team and to all the volunteer organizations and the Governors who stuck with you while we were working this out. Essentially many of the Governors gave us a no-interest loan that kept a lot of these things going during this time. So, again many thanks and please thank everybody.

Senator BOND. Thank you, Senator Mikulski.

Just a few quick questions, Mr. Wofford. You are always welcome to expand upon these and if there is information that you need, we would always be happy to have it in written form.

## GRANT REVIEW PROCESS

The inspector general recommended regularly scheduled external quality control reviews of the grant award process. Did that occur in 1995?

Mr. WOFFORD. Excuse me. I was not around.

Senator BOND. Well, will it occur in the 1996 award cycle?

Mr. WOFFORD. Shirley Sagawa, our Executive Director.

Ms. SAGAWA. The 1996 reviews are only renewals, so there is no new. So, as soon as we have a new competition, then we will implement the recommendations of the inspector general.

Senator BOND. All right.

## DROPOUT RATES

Mr. Wofford, quarterly reports show a pretty high dropout rate for some of the programs. When we are looking at the costs—and

I realize the costs as you so eloquently pointed out are not income or benefits directly to the participants. We are concerned about the costs. The costs can be pretty high and the program itself is only succeeding to the extent that the participants complete the program.

Do you know what has been the dropout rate for the 1994 grant cycle and the cycles on which you had an opportunity to review the past performance?

Mr. WOFFORD. We have done a lot of looking at individual projects where the rate of not finishing one year was higher than in others. It is a signal that there might be something wrong with the project.

Senator BOND. Over what level do you consider it to be a high rate? What would be the warning light level, the trigger level?

Mr. WOFFORD. Well, I am disappointed to hear that the Peace Corps rate is much, much higher than it was when I was in the Peace Corps in the 1960's. I think it is 30 percent or something like that.

If I were to take a ball park figure, I would say 20 percent would be an area that would begin to worry me.

We have gone over a great part of the renewal applications from the national directs, and in a number of cases I was delighted to see that a project at the first year that had a number of people not finish now so far this year has a very high rate. Our present indication is that 90 percent as of now are doing well in the second year.

But the projects differ. A Youth Corps project that has as its constituency unemployed young people, which is a whole tradition of service that came into the Corporation—it was already percolated up from the California Conservation Corps in California. Youth Corps—they do not necessarily view somebody who does not stay 1 year as a dropout if they get a good job.

Senator BOND. There has to be some followup system, and if someone leaves the program for another job, then I think that ought to be in a special category and that should certainly not count against the program. Or if they become a full-time student and you can document that, that should not count against the program. But I would think that that information on a macro basis and a micro basis would be one of the important measures that you would employ.

Mr. WOFFORD. Yes; the answer is yes to that.

I want to make sure you realize that a person who does not complete the 900 hours, if it is the part-time model, or the 1,700 hours for a full-time corps member, until they complete those hours, does not get the education award. That is one of the controls we have in this.

Also, some of those people that do not complete the hours on the schedule of 1 year are in the process of still trying to complete the hours.

So, with 430 different programs, though we are collecting this information on the exit forms as to why they left and what the reasons are—and we have to account for it in the National Service Trust—there is a great variety from programs where almost nobody does not finish the year to programs where some of them go to school and get jobs.

Particularly the part-time model makes it easier for students or people working to feel that there was less of a commitment than a commitment to a full-time year.

Senator BOND. I think these tools should be useful measurements that you would want to employ.

Mr. WOFFORD. Yes.

### CASHING OUT AND PRORATED EDUCATION AWARDS

Senator BOND. I have heard stories from time to time—and I do not even know the validity of them—of people cashing out their educational awards. Is there any way in which they can cash out their educational awards?

Ms. SAGAWA. The only legal way that they can cash out, they can leave early and still get an educational award, is if they leave for compelling personal circumstances, which it currently is defined by the programs. We are reviewing the criteria that programs are using to see if we need to tighten up the restrictions.

Senator BOND. I think it would be interesting because I have heard some stories about it and it would be interesting to know.

Mr. WOFFORD. They do not get cash, Mr. Chairman. Your cash out does not describe the education voucher. They get a pro rata voucher in those I think rare circumstances which, if they get admitted to a college or university within 7 years, they can draw down.

Ms. SAGAWA. Yes; I misunderstood the question. The only programs that allow a cash out are AmeriCorps NCCC—and we have eliminated that option—and AmeriCorps VISTA.

### EDUCATION AWARD USE

Senator BOND. Of the ones who successfully completed service in the 1994 cycle, do you have figures of how many have used their educational awards? Do you have a followup on their educational performance? Are they going to school? Are they using those vouchers? Do you have that kind of information?

Mr. WOFFORD. Over 8,000 have drawn down their education awards. They can do it anytime within 7 years. We are in the process of trying to estimate what the rate will be and when it will be drawn down.

Senator BOND. Out of how many were there? About 23,000?

Mr. WOFFORD. About 22,000 to 23,000 persons.

Senator BOND. So, 8,000 have used their full awards?

Mr. WOFFORD. They have started drawing down.

Senator BOND. They have started drawing down?

Mr. WOFFORD. Some all and some partly.

But remember, Mr. Chairman, also that you do not necessarily want everyone in national service to stay the full year. There are some people that cannot live up to the high standards that are set. A lot is asked of people. So, measuring why people leave is a very important one. In some cases they have been encouraged to leave or asked to leave.

Senator MIKULSKI. It was meant to be a program where you really did have high standards, and if they did not measure up, like on substance abuse, boot them out.

Senator BOND. That is part of the results that we are interested in seeing.

You say that some of them have not used it. I do not know about national service. Maybe the experience is different, but I have the feeling that people who do not move from national service fairly promptly into an educational commitment are going to see the likelihood tailing off significantly because I think you are going to get the bulk of those who are going to use the educational awards going rather promptly into it.

I tried to go back after I had been out a couple of years and I have talked to people who have tried to go back to get additional education, and once you have gotten out of that habit, it gets tougher and tougher to get back into it. So, I think there is going to be a very steep decline in ensuing years of those from 1994 who did not go promptly into an educational setting.

Senator MIKULSKI. Well, Mr. Chairman, you bring up an excellent point, if I could follow-on with you. I think your observations about human behavior are accurate.

But I would like to go back to when we were inventing this program. It was not meant to earn a voucher so you could go to school. It was to earn a voucher to pay off your student debt. Its primary purpose was to help people reduce their student debt so that we could get our money's worth. You had demonstrated that you were through school, you had already gotten that degree or that associate of arts degree, and that you had used it to reduce your student debt. It was not to be a pump primer to get you to go, though in certain at-risk youth categories it was meant that they would almost be going through this more boot camp environment to learn those skills to get them ready.

How many of these 22,000 people are related to student debt and how many are related to getting them ready to go to college?

Mr. WOFFORD. One-half of the first 8,000 that have drawn down their education awards are using it to pay off college and university debts. I am told the present estimate is about one-third of AmeriCorps people are college graduates who would have the debt problem.

Senator MIKULSKI. Only one-third?

Senator BOND. Only 4,000 are paying down the debt.

Mr. WOFFORD. Of the 8,000.

Senator BOND. Yes; but that is out of a total of 23,000, only 4,000.

Senator MIKULSKI. I think we are getting off track here.

Mr. WOFFORD. You would like a higher proportion of college graduates?

### DIFFERENT MODELS OF SERVICE

Senator MIKULSKI. I want to go back to the original purpose of the program and make sure that we are also getting our money's worth. Our money's worth is that people showed that they were ready—it was to reduce student debt. That is what its primary purpose was: to reduce student debt. It was not modeled on the GI bill, though it was to show a certain service component.

Mr. WOFFORD. There was quite a debate in the shaping of the bill. I know the President in his own mind and the task force had a debate on this subject. The conclusion that was made by the—excuse me. I am just given some other figures to give you in 1 minute. The conclusion that was reached was that it would be both to pay off college debt and——

Senator MIKULSKI. It was never meant to be half-and-half.

Mr. WOFFORD. I can only say that, in the first place, the act is both for high school student graduates or people that will get their GED who can use it to pay for college or for people who have a college debt and would use the voucher to pay it off.

One-third are precollege, one-third are in college or going back to college, and one-third have finished college and do not necessarily all have a debt.

Senator MIKULSKI. Is that the way it was authorized?

Mr. WOFFORD. The authorization does not specify what the ratio should be—most of the Youth Corps, which were incorporated specifically in the act, the full-time Youth Corps are either high school dropouts or——

Senator MIKULSKI. That is right and that is the Civilian Conservation Corps model. We understand the validity of that.

Mr. WOFFORD. And they can use the voucher for further job training, vocational school, or for college and university. In the projects I visited, one of the things that happens that is measurably encouraging is the people that had never thought of going to college in project after project——

Senator MIKULSKI. Mr. Wofford, I know all the good intentions. What we are looking at, though, is if you have a significant dropout rate in two-thirds because they have not finished school, then we are wasting a lot of staff time, infrastructure time, and so on when the focus was elsewhere. I am looking at the data. I would like our decisions to be data-driven.

Senator BOND. As I understand, Senator Grassley wanted—his support in this area was basically for the idea of those who are in college or had graduated to pay off their loans, and he was looking at the scholarship-only segment of it. I think there can be more support if we show that the dollars are being channeled in these ways.

I would like our staff to follow up with you and see just to what extent the paying off the scholarship—I am interested in this $500 matching scholarship for high school students. This is a totally different program, but matching a $500 scholarship—I personally set up a very small scholarship in honor of a friend of mine, Alan Woods, in our high school.

Senator MIKULSKI. Oh, I know Mr. Woods. He was the former director of AID that died of cancer. What a fine man.

Senator BOND. Right. He was my boyhood tennis partner, my AA.

Senator MIKULSKI. A swell guy.

Senator BOND. So, we set up a very small scholarship at the high school we both attended to encourage people to be interested in foreign service and international affairs. But that is beside the point.

Mr. WOFFORD. Senator Grassley did commend that scholarship proposal by the President in a public statement. It comes within his category of education-only awards, which we have already with our present funds allocated, at least, 2,000 slots.

Senator BOND. So, about 2,000?

Mr. WOFFORD. For right now in the awards for this year. If that program proves as promising as I hope it will be—including promising to a lot of these organizations that would have the capacity to give support on their own, to many of these organizations that would get from us only the education award—we will expand that. We are looking forward to expanding that.

We would look forward to working with you and your staffs on the questions of whether you think the ratio of college graduates should be increased in the corps, and on the education-only awards, how to shape that and make it a bigger program, and, third, on the part-time model, Senator Mikulski. We want to make that work and work well.

Senator MIKULSKI. Well, I think we are interested in these dropout rates because then you put a lot of money into getting people in and then they go. Then you do not have the volunteer stuff being done and you have just not maybe gotten the most out.

Mr. WOFFORD. Yes.

Senator MIKULSKI. So, we are looking at the data.

Senator BOND. Let me ask again a couple of quick questions.

## DRUG CONTROL BUDGETING

Perusing through the budget book is always a great sport. We find that the administration has included $2 million for the Corporation in the EPA budget. The Federal drug control funding shows Corporation for National and Community Service, $38 million.

Where are all these little pots of money popping up from? Since we cut off the funding for Federal agencies, is OMB deciding that they are going to get national service back into Federal agencies by these little funding dollops here and there?

Mr. WOFFARD. Well, Senator, of course, we do not have any control about what other Federal agencies do. Some Federal agencies——

Senator BOND. But do you know what they are doing? There is a line in this table 22, page 295 under Federal drug control funding. It says Corporation for National and Community Service, $26 million actual in 1995, proposed $38 million for 1997.

Mr. WOFFORD. Gary Kowalczyk, our acting Chief Financial Officer, I think may be able to respond more precisely to your question.

Mr. KOWALCZYK. Mr. Chairman, that particular number is an estimate of our contribution to the entire drug budget effort. It is not a separate dollar amount that is requested under the drug activity. It is a part of our budget. All agencies estimate the percentage of their budget that is being devoted to drug control activities, and that is what that number is within that budget. It is not a separate request. It is simply our estimate of what the percentage of our activity is in the drug control area.

Senator BOND. Well, I understand in the EPA area there is a separate request for $2 million. Do you know what that is?

Mr. KOWALCZYK. We will have to examine that for the record, Mr. Chairman. Our understanding was that that was not part of the EPA submission.

Mr. WOFFORD. Some Federal agencies have their own and had their own models of using service at the local level to accomplish their purposes. The Weed and Seed Program before AmeriCorps came along was developing the service model in most of the programs I knew in Pennsylvania. AmeriCorps or VISTA have in some cases helped those programs grow, but it was a major thrust of the Department of Justice entirely—its their mission as they see it—apart from whether AmeriCorps exists or not.

Weed and seed programs supported things like——

Senator BOND. I understand. I am familiar with weed and seed, but this $38 million number is not a segregated amount. It is your estimate of how much you are putting in.

Mr. WOFFORD. How many of our members are working in anti-drug activities.

Senator BOND. I see. So, we take the existing budget. This is a recompilation. This is money already spent. It is a recompilation in the programs that are involved in this. OK, I think.

What would it take this year to continue the Corporation's current activity based on what was funded for 1996? How much would it take?

Mr. WOFFORD. I think we would like to respond to that more carefully, if we can submit that for the record.

Senator BOND. All right. We will hold you to it. At a very base minimum, I think it is around $120 million some odd.

Senator Mikulski, I have finished my questions. Do you have anything further? We have got a lot of work for the staff to do.

Senator MIKULSKI. Well, I am going to have an oversight hearing on the authorizing on Tuesday. So, many of the other questions I have I think would be organized around the authorizing committee hearing. In fact, I had spoken to Senator Kassebaum, on whether we should have done a joint hearing. But we are going to go do that and so I will save some of my other questions. I know the hour is late.

Senator BOND. Thank you very much.

Senator MIKULSKI. I think we are on the same wavelength on this.

## SUBMITTED QUESTIONS

Senator BOND. These are very interesting questions. I am getting a little different picture and I think we ought to have a clear understanding of what the program is doing, what is it accomplishing, and if Congress chooses to continue it, whether it wishes to place more emphasis in different areas. I think this can be very helpful.

[The following questions were not asked at the hearing, but were submitted to the Corporation for response subsequent to the hearing:]

### QUESTIONS SUBMITTED BY SENATOR BEN NIGHTHORSE CAMPBELL

*Question*. The Corporation for National Service has a partnership with the Coalition for Homeless Veterans. To what extent does the Corporation plan to support Colorado's Coalition? What more can the Corporation do to support the Colorado Coalition with the Homeless Veterans Assistance Fair, also known as Operation Stand Down, scheduled for this Veteran's Day?

Answer. The Corporation currently funds the National Collaboration of Homeless Veterans in Los Angeles. These AmeriCorps members assist homeless veterans to become self-sufficient by conducting outreach to homeless populations, assisting with program intake, providing educational and vocational support, helping veterans access medical and social services, and building working relationships with other service providers. For the 1996–97 program year (which will be supported with fiscal year 1996 funds), service will continue in California with possible expansion to Baltimore, Maryland.

There are no immediate plans for the Corporation's direct support of the Colorado Coalition. However, we have suggested and the Colorado Governor's Commission on National and Community Service has agreed to invite the Coalition to join the Colorado Service Network, which is a group of organizations formed to assist in the future development of the vision and scope of community service programs and volunteer service in the state of Colorado. The Colorado Service Network was established to create a statewide vision of service, to develop and communicate information among service providers, and to minimize program duplication while maximizing federal investment in the state. The Colorado Service Network has collaborated on several service projects in connection with National Day of Service and Martin Luther King Day. Colorado Service Network representatives meet regularly, convened by the Colorado Governor's Commission on National and Community Service. Training and technical assistance opportunities are developed and designed through the Colorado Service Network to promote quality program delivery and to foster collaborative relationships between programs.

*Question.* What are some accomplishments of the Corporation's Native American Programs? What are the Corporation's plans for fiscal year 1997 with the Native American programs?

Answer. In the 1994–95 program year (fiscal year 1994), the Corporation for National Service awarded $1.55 million of the AmeriCorps State and National grant funds to Federally-recognized Native American and Alaskan Native organizations. In the 1995–96 (fiscal year 1995) program year, it awarded $2.2 million. In addition, the Corporation funds numerous Learn and Serve America, AmeriCorps*VISTA, and National Senior Service Corps programs that address the needs of Native American communities. These programs have made significant progress in enhancing the educational skills of students, improving the environment, and reducing violence in Native American Communities.

For example:

—Corpsmembers in the Round Rock AmeriCorps program in Arizona have increased the test scores of the second graders they tutored by 42 percent.

—Responding to the need to winterize the homes of low income citizens in the community, AmeriCorps members in the Fort Belknap Community Council Program in Montana have worked with hundreds of individuals in the region.

—Serving with five tribal colleges, students from the University of Montana have established summer camps that provide a variety of recreational activities for children.

—The Learn and Serve America—American Indian Law Program at the Gonzaga University School of Law in Washington strengthens the justice system of two Indian reservations through the Spokane and Coeur d'Alene Tribal Courts by providing competent pro-bono legal representation to American Indians who have no other access to legal counsel.

—More than twenty National Senior Service Corps programs focus specifically on the needs of the Native American community.

—In Arizona, 196 senior volunteers serve as Foster Grandparents throughout the Navaho nation to meet the needs of children in health care, special education, juvenile delinquency and day care centers.

—In the Pueblo of Zuni, Senior Companions serve with the frail elderly assisting meal preparation, personal care, and hygiene.

In April, the Corporation held a conference in Denver called "Weaving Communities, Building Unity." A major theme of the event was the parallel between national service and the tradition of service in native communities. Program staff and participants from AmeriCorps State/National/Tribe, Learn and Serve America, and National Senior Service Corps programs attended the conference to take advantage of this training and technical assistance opportunity for tribal grantees and project sites. The conference explored how Native Americans and the Corporation might work together better to meet the growing challenges faced by many Native American communities.

Despite budget cuts, the Corporation anticipates it will continue to fund programs to address the needs of Native American communities at the same level in the 1996–97 (fiscal year 1996) program year.

*Question.* What are the key Corporation accomplishments to date and what are the plans for fiscal year 1997 to assist at-risk youth and support anti-gang programs nationwide, especially in Colorado?

Answer. In 1996–97, the Corporation for National Service will address the needs of at-risk youth and support anti-gang programs nationwide through programs focusing on at-risk youths in the areas of public safety, education, environment, and human needs. Through local programs, national service participants will tutor and mentor youths, provide in-class support to students, teach conflict resolution, and develop and implement after-school activities that meet the needs of at-risk youth. In the 1995–96 program year currently coming to a close, AmeriCorps members at 483 locations around the United States are serving at-risk youth.

For more information about at-risk youth and anti-gang programs in Colorado, please see the response to the next question.

*Question.* The Corporation for National Service has a working relationship with the Metro Denver Gang Coalition in Colorado through its AmeriCorps component. How is this relationship working to benefit at-risk youth in my state? Also, how many youth correctional facilities and intervention programs is the Corporation involved in both Colorado and Nationwide?

Answer. The Metro Denver Gang Prevention Program is serving the needs of Denver's at-risk youth in two ways.

First, AmeriCorps members serve in schools, where they increase school success among at-risk youth through tutoring and mentoring activities, thus increasing the academic achievement of lower-performing students. AmeriCorps members also provide at-risk students training in conflict resolution and other alternative dispute resolution techniques, reducing the levels of violence among young people and improving classroom behavior.

Second, AmeriCorps members provide intervention services such as youth victim support groups and conflict mediation classes. These programs augment the training going on in the schools and help to reduce the incidence of violence among youths.

In addition to the Metro Gang Prevention Program, there are 13 other AmeriCorps State and National (grants) and AmeriCorps*VISTA programs in the state of Colorado which address the issues that at-risk youths may confront. Some programs serve to improve academic achievement and equip youths with skills in conflict resolution and mediation like the Metro Denver Gang Prevention program does. Other programs reduce the school drop-out rate among teens, connect homeless youths to appropriate services, develop and hone youth leadership skills, and educate youths about the dangers of drug and alcohol abuse.

The AmeriCorps*National Civilian Community Corps (NCCC) program based at the former Lowry Air Force Base has established a strong partnership with the Youth Offender System (YOS) in the Colorado Department of Corrections. Housed in the Federal prison, YOS is a specially-designed program providing youth offenders with a controlled and regimented environment which helps them develop useful skills and abilities to prepare the youth offenders for reintegration into the community. Four NCCC teams have worked in the YOS program throughout the past year, providing approximately 13,000 hours of service by developing and implementing an "Educational Assistance" program to allow YOS residents to be involved in community service projects and an "Employability Skills" program to help YOS residents explore career opportunities and prepare for job searches. They also try to involve local businesses in the YOS program.

The year-long NCCC commitment to the YOS program has resulted in significant accomplishments, including:

—the development of a data base of organizations willing to accept a released YOS resident for employment following incarceration;
—the development of an information package to explain the YOS program to prospective community businesses and places of employment;
—the collection of over 350 donated books and magazines for a YOS resident library;
—approximately 2,120 hours in one-on-one GED tutoring;
—the development of several "special one-week classes" for residents; and
—the creation of two editions of a Colorado Driver's Pre-test to help YOS residents obtain their drivers' licenses.

Corps members have also worked with YOS staff to include YOS residents in corps-wide projects including the National Day of Service and work on a rugged mountain trail.

Because of the success of the NCCC team in working with detention staff and youth offenders on this program, a similar NCCC project working with younger youth offenders is being considered at Lookout Mountain Detention facility for the 1996–97 project year.

*Question.* The Corporation currently supports the National Civilian Community Corps (NCCC) at four sites nationwide, including one at the former Lowry Air Force Base in Colorado. What are some of the accomplishments of the NCCC in Colorado and throughout the West? What are its plans for fiscal year 1997? To what extent does it coordinate with other national service programs in Colorado to avoid duplication of efforts and maximize the federal investment?

Answer.

### *NCCC Accomplishments in Colorado*

During the 1995–96 program year, the Denver-based Central Region NCCC campus completed 90 service projects throughout the state of Colorado: 39 addressed environmental needs, 29 addressed human needs, 15 addressed education needs, and 7 addressed public safety needs. Central Region NCCC corps members have served 153,637 hours in the state of Colorado since October 1995. The Corporation estimates their service work has or will benefit over 4 million people.

Environmental service projects in Colorado range from environmental restoration and riparian work along the San Miguel, Arkansas, Colorado and South Platte Riverways, to construction of trails at Roxborough, Mancos, Ridgeway, Boyd Lake and Lory State Parks and local parks in Jefferson, Denver, Douglas, Arapahoe, and Boulder Counties. Corps members have constructed energy efficient visitor centers, outdoor education classrooms, and an amphitheater for non-profit nature centers and museums. Additional archeological work and artifact preservation from the Anasazi tribe was completed for the Hawkins Preserve near Cortez, Colorado.

Corps members constructed a playground for the Fremont County Department of Social Services and completed construction on nearly one dozen homes for low income families through Habitat for Humanity and other metropolitan Denver-based housing coalitions. Additionally, a team of NCCC corps members worked with the Colorado Rural Housing Development Corporation in the San Luis Valley to construct permanent homes for migrant farmer families.

Locally based teams have worked with area schools tutoring and developing after school sports and recreation programs, as well as working with adult learners by tutoring in English Speakers of Other Languages (ESOL) lessons and GED preparation work.

The primary public safety work completed by Central Region corps members in Colorado has been with the Colorado Department of Corrections. (Please see previous question on gang coalition.)

### *Colorado-based NCCC Accomplishments in Other Parts of the West*

In Western States served by the Central Region (Texas, Oklahoma, Montana, New Mexico, North and South Dakota and Wyoming), corps members have worked on 27 different service projects since October 1995. Projects have included: preservation of endangered species habitats in North Dakota and Texas; trail construction in several national parks and monuments in Texas and New Mexico; establishment of community gardens in Lubbock and Dallas, Texas; and forest restoration work and wildland fire suppression efforts with the 8 Northern Indian Pueblos in New Mexico.

The Central Region Campus also serves the midwest and great plains states of Nebraska, Kansas, Iowa, Illinois, Indiana, Michigan, Wisconsin, and Minnesota. Since October, 1995, a total of 123 service projects have been completed by the Central Region.

The Central Region NCCC remains prepared at all times to respond to local and national disasters. This year, teams have been deployed to St. Louis, Missouri and Lama, New Mexico in response to flood and fire disasters, respectively.

### *Plans for the 1996–97 Program Year*

The Central Region will continue to expand its efforts to serve all 17 of these states during the next year. At present there are over 35 project proposals for the first quarter (October—December) of the 1996–97 Program year. Outreach to underserved areas of Colorado is currently underway.

### *Coordination with Other National Service Programs in Colorado*

The NCCC is a part of the Colorado Service Network, which is described above in the response to question 1. The NCCC and the Points of Light Ambassadors to the Colorado Service Network have worked together to develop workshops at regional conferences and made presentations to community groups in Denver and Aurora.

*Question.* Concerns have been raised regarding the cost of the NCCC program, compared to other Corporation-supported initiatives. Please provide the Subcommittee with a cost-benefit analysis of NCCC, both in Colorado and nationwide. Please include in this analysis any information on the cost per member, any independent evaluation findings regarding its activities, and the rationale of how the Corporation assigns NCCC to projects instead of other AmeriCorps programs which may not cost as much per member.

Answer. The NCCC was originally proposed in 1991 as one of three civil military programs to respond to a downsizing military and to address domestic unmet needs. NCCC members are trained comprehensively as a team and assigned to projects as a team. For the duration of the term of service, NCCC members work together and are able to accomplish substantial amounts of service work in short periods of time. Greg Chun, Program Director of the AmeriCorps Rapid Response Corps run by the American Red Cross in Los Angeles, relates that when asked how many volunteers are needed in response to disasters, the most frequent answer is, "give me five NCCC members or 30 volunteers." Communities may have individual AmeriCorps members sponsored by locally-based grantees, but in times of emergency they can increase productivity and accomplish a great deal more when larger teams (such as those of the NCCC) are able to provide short-term support.

The NCCC began in the summer of 1994, just 10 months after the National and Community Service Trust Act of 1993 was signed. The second class to graduate from the Colorado campus will complete the program on August 1 of this year. The 1996–97 program year will begin on September 23. A formal, separate cost-benefit analysis of the NCCC has not been performed. However, as with the other AmeriCorps programs, costs and benefits derived from those investments are of primary concern to the Corporation and are continuously reviewed to make improvements.

Attachment 1 shows actions being taken to improve the cost-to-benefit ratio and reduce the cost per NCCC corpsmember. The cost per corpsmember, excluding the education award, is projected to be reduced to about $19,200 per member for the 1996–97 program year. This is consistent with costs for other residential programs. The NCCC conducts service projects in four priority areas: the environment, education, public safety and unmet human needs, and provides disaster relief support in partnership with the American Red Cross.

Projects conducted by NCCC are presented by community sponsors in the form of project proposals. Community sponsors range from grassroots, non-profit organizations to state agencies. Proposed projects must be consistent with identified needs of the community; have clear goals/outcomes; and leverage community support in one (or more) of several areas- in-kind, volunteers, technical assistance, and lodging and food when appropriate. Proposals that meet the criteria are then further developed in partnership with NCCC staff and corpsmembers. Attachment 2 is a description of several Colorado NCCC projects. To date, the number of quality proposals exceeds the number of teams available for assignment.

In addition, letters from community leaders attesting to the benefits of the NCCC are attached.

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## ATTACHMENT 1

## CORPORATION FOR NATIONAL AND COMMUNITY SERVICE—NATIONAL CIVILIAN COMMUNITY CORPS

### COST PER CORPS MEMBER (EXCLUDES ED AWARD AND TL CONTRIBUTION)

*Class I (6/26/94–8/18/95)*

| | |
|---|---|
| Total budget[1] | $28,900,000 |
| Cost per Corps Member | $32,363 |
| Number of Corps Members | 893 |

*Major savings implemented during Class I to reduce future costs—in thousands of dollars*

| Action | Amount |
|---|---|
| Encourage local funding/support for work projects[2] | $2,475 |
| Reduce uniform costs | 200 |
| Replace Aberdeen campus with Perry Point | 2,500 |
| Reduce Corps Members' allowance[4] | 1,675 |
| Reduce staffing in headquarters | 600 |

*Major savings implemented during Class I to reduce future costs—in thousands of dollars—Continued*

| *Action* | *Amount* |
|---|---|
| Reduce MEPS costs | 150 |
| Total | $7,600 |

*Class II (9/29/95–9/5/96)*

| | |
|---|---|
| Total Budget[5] | $21,300,000 |
| Cost per Corps Member | $23,355 |
| Number of Corps Members | 912 |

*Major savings implemented during Class I to reduce future costs—in thousands of dollars*

| *Action* | *Amount* |
|---|---|
| Encourage local funding/support for work projects[2] | $52 |
| Reduce uniform costs[3] | 400 |
| Reduce training costs[6] | 120 |
| Reduce Corps Members' allowance[4] | 1,818 |
| Eliminate 8A contractors, IPA's, and restructure campuses | 910 |
| Reduce food costs | 318 |
| Total | $3,618 |

*Class III (9/21/96–7/25/97)*

| | |
|---|---|
| Total Budget[7] | $18,000,000 |
| Cost per Corps Member | $19,210 |
| Number of Corps Members | 937 |

[1] Includes fiscal year 1994 Appropriation of $10 million, $10 transfer from DOD, less $5.8 million given to Trust Fund, $18 million fiscal year 1995 Appropriation, less $3.3 million fence.

[2] Reduce Spike travel budget from approximately $800K per campus for Class I, to $225K per campus for Class II, to $212K per campus for Class III. An additional savings of $175K is realized from closing the Aberdeen campus and opening Perry Pt.

[3] From $850 per Corps Member for Class I, to $650 per Corps Member for Class II, to $174 per Corps Member for Class III.

[4] From $8K per Corps Member for Class I, to $6K per Corps Member for Class II, to $4K per Corps Member for Class III.

[5] Assumes current appropriation level for fiscal year 1996 plus $3.3 million of fiscal year 1995 fence.

[6] From $55K per campus in fiscal year 1996, to $25K per campus in fiscal year 1997.

[7] Depends upon final Congressional action for fiscal year 1996 and fiscal year 1997. Administration policy is $22.3 million which will fund 1,200 Corps Members.

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## ATTACHMENT 2

## AMERICORPS*NATIONAL CIVILIAN COMMUNITY CORPS

### EXEMPLARY PROJECTS—1995–96

Issue Area: Human Needs 1995–96
Campus: Denver
Project: Neighborhood Housing, Denver, CO

The Cole section of Denver suffers from numerous decaying, empty houses that attract crime, arson, and other problems. The houses are renovated in order to provide readily available affordable housing that low income families can own rather than rent.

—Repaired flooring, installed wallboard, painted a two bedroom house.
—Cleaned debris from a five apartment complex. Repaired windows, installed insulation, hung interior doors.
—Helped overhaul bathrooms, plumbing, and heating systems.
—Worked with community organizations and private volunteers to paint exteriors, clean yard, repair fences.

Issue Area: Education 1995–96
Campus: Denver
Project: Boys & Girls Club—Aurora Model, Aurora, CO

Boys & Girls Club efforts enhanced by a community outreach component.

—Developed list of contacts—churches, businesses, senior groups, community organizations, schools which could serve as sources of volunteers at the Club.

—Created new volunteer orientation plan to better prepare new volunteers to assist at the Club.

—Sent Public Service Announcements to newspapers, radio stations.

—Helped coordinate effort between Club Director and local retail business that wished to start employee incentive program.

—Helped develop a list of needs for particular Boys & Girls Club programs; identified possible sources of supply within community.

—Created Activity Packets for Club's learning center and cultural arts program.

—Initiated a Learning Center Power Hour, which is part of a national incentive program to enhance a young person's study skills.

Issue Area: Public Safety 1995–96
Campus: Denver
Project: Youth Offender System, Denver, CO

This program targets young offenders, and helps them gain self confidence and respect for others, leading to a positive reintegration into society.

—In this ongoing project, Corpsmembers act as positive role models, serving as teacher assistants, tutors, mentors.

—Conducted survey of region to determine residents' desires for community programs and their career goals.

—Developed a database of organizations to work with the residents.

## EXEMPLARY PROJECTS—1994–95

Campus: All
Project: Flood Relief in Louisiana

American Red Cross Disaster Response-trained Corpsmembers from Aberdeen, Charleston, Denver, and San Diego responded to extensive flooding in Louisiana in June 1995.

—Corpsmembers assist in mass care for victims in temporary shelters.

—Completed comprehensive damage assessment of affected areas.

—Provided logistics, communications, and administrative support to other relief organizations.

Issue Area: Environment 1994–95
Campus: Denver
Project: El Dorado Canyon State Park, Denver, CO

The park is visited by 200,000 people each year; handicapped accessible trails will total over 200 yards. Project developed in collaboration with El Dorado Canyon State Park, Boulder County Open Spaces, and the Bureau of Land Management.

—Efforts included slope stabilization and Crescent Meadows re-vegetation involving scarcification, planting, mulching, and slashing.

—Trail construction techniques met Trail Accessibility standards called for in the Americans with Disabilities Act.

Issue Area: Human Needs 1994–95
Campus: Denver
Project: Lyons Area Homes, Denver, CO

Project developed in collaboration with State Office of Emergency Management and Federal Emergency Management Agency. Project included disaster relief after extensive flood damage to homes of fifteen indigent families.

—Assisted in the repair and enhancement of flood resistant construction techniques (installation of glass bricks in basement windows which will not break under pressure of flood waters).

—Helped develop a videotape for national distribution which will provide information on how to prevent extensive flood damage to homes; how to create safe "defensible space" around homes, including brush clearing and enhanced awareness of nearby stream channels prone to flooding.

—Improved flow of stream channels by removing obstructions.

### LETTER FROM CARL WOTOWIS

COLORADO DEPARTMENT OF CORRECTIONS,
DIVISION OF COMMUNITY CORRECTIONS,
*Lakewood, CO, May 7, 1996.*

KRISTEN DOLWICK,
*National Civilian Community Corps,*
*Aurora, CO.*

DEAR MS. DOLWICK: Thank-you for all the hard work and concern you and Water Team 4 put forth for the Youth Offender System program. Your caring and commitment provided the YOS residents with excellent tutors, mentors, and role models. Hopefully, from your example, some of our residents will see the benefit of continuing their education and commit to making changes in their lives.

Water Team 4, from January 16, 1996–March 29, 1996, provided YOS with approximately 540 hours of hard work and service. Your team did an excellent job assisting in the classrooms and sourcing social and recreational activities that will help our residents in the community.

The spirit, enthusiasm, pride, and motivation you displayed was an invaluable resource to our program. You showed our residents the benefits of giving to others and leading a positive lifestyle.

Thank-you again for your commitment to this project and best wishes to you and Water Team 4 in your futures. I hope YOS has enriched your lives in some small way.

Sincerely,

CARL WOTOWIS.

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### LETTER FROM NANCY CHARBENEAU

LOWER COLORADO RIVER AUTHORITY,
*Austin, TX, April 16, 1996.*

MS. DALE WHYTE,
*Regional Project Director, National Civilian Community Corps, Lowry Air Force Base, Aurora, CO.*

DEAR DALE: On behalf of the Lower Colorado River Authority, I would like to thank you, Lisa Shaw, and her wonderful team for all the great work you did for us this year. Even though the team was with us only a short time, they made a great deal of difference to the people in our service area. The team worked very hard on the various projects they were given. The projects they worked on included slope stabilization, archaeologic and historical site improvements and trail building, all of which contributed about $25,000 worth of improvements on LCRA properties (see attached report).

The erosion control project at Camp Creek was reviewed by the U.S.D.A. Natural Resource Conservation Service and they felt that the techniques used would control the severe erosion occurring at the site. The drought conditions we are currently experiencing will impact the transplanted vegetation, but the site has been substantially improved. The trail system additions at Camp Creek open most of the upland area of the tract for public uses and is one of the few nature trails in the Burnet County area.

The historical/archeological projects that the NCCC team worked on included clearing brush and opening access to a historical site, removal of a historical carbide unit for relocation to another, mapping of a historical site, historic structure stabilizations, repairs to exhibit areas and installation of interpretive signage. We were particularly pleased when six members of Lisa's team spent some of their free time on a Saturday working at the Kingsland Archeological Center. This speaks volumes about the dedication and initiative of Lisa and her team!

We enjoyed working with Lisa and her crew this year and are looking forward to working with you and your organization in the future. Please send us your 1996–97 project proposal forms as soon as you have them ready. We are working on arranging our own lodging for a team next year. Thank you and best wishes in the upcoming budget battles!

Sincerely,

NANCY CHERBENEAU,
*Parks and Lands Management Program Supervisor.*

## LETTER FROM NOBLE WALLACE

COLORADO DEPARTMENT OF CORRECTIONS,
*Denver, CO, December 19, 1995.*

Mr. JULES HAMPTON,
*Campus Director, Americorps and NCCC,*
*Denver, CO.*

DEAR MR. HAMPTON: I would like to take this opportunity to formally give thanks and appreciation for the Americorp team that has been working with the Youthful Offender System (YOS).

The team began their project with YOS on October 31, 1995. Since their arrival, the team leader, Mr. Azikiwe Chandler, and all members have been very instrumental in their roles as tutor, teacher-aide, role model, and mentor. I was very impressed with their performance, dedication and "can do" attitude.

Because of their willingness and desire to help make a difference and to go that extra mile in helping young offenders, their mission has been a huge success. Americorp's primary project was to establish the community service piece of YOS, serve as teacher-aides, and tutors for the residents. Their positive influence also allowed them to fill the role of role models and mentors.

In addition to the above, several team members volunteered to come into the facility on their own time to assist staff with arts and crafts projects with the residents.

Their mere presence has demonstrated to the residents that people can help others without being labeled weak or unmasculine.

The success of any organization, group, or team is accomplished through good leadership which was displayed by the leader and assistant leader of the team, Mr. Chandler (Zik) and Chase (Tom). Enough can not be said about the positive attitude, leadership abilities, and professionalism shown by the team leaders. It was indeed a pleasure to meet and work with them for the past six weeks. Please give my sincere thanks and appreciation to all members of the team, for a job well done, professionalism, and outstanding dedication shown during their time with the Youthful Offender System.

Sincerely,

NOBLE WALLACE.

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## LETTER FROM VOLUNTEERS OF AMERICA

*Denver, CO, January 15, 1996.*

Mr. TERRY RUSSELL,
*Counsel, CNS,*
*Washington, DC.*

DEAR MR. RUSSELL: I would like to take this opportunity to forward my sincere appreciation of the NCCC members that helped the Volunteers of America City Harvest Program late in 1995. City Harvest is a clearinghouse for donated food which is re-distributed to 150 food pantries operating in the Denver metro area. During 1995, the program "re-cycled" over 1.5 million pounds of food to help feed Denver's hungry.

This year, the program was the sole beneficiary of the state's largest one-day food drive sponsored by the Boy Scouts of America. By the end of the collection day, over 80 tons of non-perishable food items had been collected and stored in our program warehouse.

This incredible mountain of food was literally attacked by one of the greatest volunteers crews that has ever worked with the program—a team of thirteen NCCC members! They were presented with the task of sorting through this overwhelming amount of food to rebox it by like product in preparation of distributing it equitably through our pantry network. To me, the challenge took on alarming proportions—but my apprehensions were laid to rest when team members quickly grouped, brainstormed and came up with a truly effective sorting system—putting new meaning to the words "team work." The team was assigned to work in the warehouse for three weeks and within that time managed to sort and rebox over 60 tons of food!

To the team's credit, not only did they whittle down this mountain of food, but along the way, shared their team work ethics with other groups of volunteers ranging from physically challenged individuals, to adjudicated youth, to AT&T executives. Each group that worked with the NCCC volunteers left the warehouse with a new appreciation of working together—sharing in the NCCC members, contagious enthusiasm of helping others by getting the job done!

I could go on and on about what a great experience this was for us! But suffice to say, without their help and willingness, we would probably still be working on the first ton! Countless individuals have already benefitted from their hard work including 2,000 of Denver's needy that received holiday baskets packed with food from the drive.

## SUBCOMMITTEE RECESS

Senator BOND. Your testimony and your assistance to us is most appreciated. It is always a pleasure to work with you, Senator, and this hearing is recessed.

[Whereupon, at 11:04 a.m., Friday, May 17, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

# DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT AND INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1997

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### THURSDAY, MAY 23, 1996

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
*Washington, DC.*

The subcommittee met at 1:08 p.m., in room SD–138, Dirksen Senate Office Building, Hon. Christopher S. Bond (chairman) presiding.

Present: Senators Bond, Burns, Bennett, Campbell, Mikulski, Leahy, and Lautenberg.

## ENVIRONMENTAL PROTECTION AGENCY

### STATEMENT OF HON. CAROL M. BROWNER, ADMINISTRATOR

**ACCOMPANIED BY:**

**FRED HANSEN, DEPUTY ADMINISTRATOR**
**SALLYANNE HARPER, ACTING CHIEF FINANCIAL OFFICER**

### OPENING STATEMENT OF CHRISTOPHER S. BOND

Senator BOND. This hearing of the VA, HUD, Independent Agencies Subcommittee will come to order.

My apologies, particularly to our witnesses, Administrator Browner, Mr. Hansen, and others, and our colleagues for having to change this hearing a number of times. The schedule of the Senate is something that never ceases to amaze me.

We will try to get in as much of a hearing as we can. We are going to impose a very strict 5 minute rule on questioning, on the statement of our witnesses, on statements of the members, and, yes, even the statement of the chairman. So if staff would start the 5-minute clock, we have many, many members who have many questions. We will try to get in as many as we can prior to the ringing of the second bell.

The subcommittee meets this afternoon to review EPA's fiscal year 1997 budget request of $7 billion. We welcome EPA Administrator Carol Browner and Deputy Administrator Fred Hansen for their second appearance before this subcommittee this year.

A number of the programs are held close to fiscal year 1996 levels, including State grants at $2.8 billion and Superfund at $1.3 billion. I am generally pleased that the administration has shown some constraints in recognition of the budgetary problems. It is not clear to me how the budget decisions were made and the extent to which relative risk analysis and thoughtful assessment of program performance, and effectiveness, and changing circumstances were involved in this.

For instance, while EPA has begun, at least in theory, to turn over more responsibility to the States through Performance Partnerships, I do not see in the budget any indication of the role of regional offices being adjusted to reflect a reduced oversight role. Shouldn't budget savings be expected here? If EPA is serious about reducing duplication of States' efforts, EPA must commit to reassessing the functions and resources needed in the regions. We cannot afford simply to reassign staff to what EPA refers to as place-based initiatives, but what others might call boutique programs.

We have had three hearings this year on EPA before this subcommittee. We had questions at the time about priorities. When everything is a priority, then nothing is a priority. The second hearing was conducted in February. Deputy Administrator Fred Hansen and others followed up on the progress in implementing the NAPA recommendations. We seem to have broad consensus. Former Administrator Ruckelshouse, the Science Advisory Board and NAPA's recommendations were right on target.

I am concerned that we do not see a lot of progress, and, while EPA claims support of NAPA's recommendations, we detect some resistance to making the necessary changes.

I think it is clear that EPA must begin setting priorities based on what the latest science tells us about risks to human health and environment as recommended by NAPA, the Science Advisory Board and GAO.

## RISK-BASED STRATEGIC PLANNING

EPA must establish budgets based on risk-based strategic planning and develop sound performance and accountability measures. EPA must turn more responsibility over to the States and the current system has to be changed because it has placed a choke-hold on industry in designing the most environmentally protective and cost-efficient means to meet environmental requirements.

This has to be changed to enable innovative, cost-effective, environmentally sound environmental protection strategies.

Sadly, NAPA's statement 1 year ago that EPA's recent budgets have been driven more by history, inertia and the crises of the moment than by strategic thinking about how the agency could be most effective has not necessarily been dispelled by the budget presented to us.

We have had great frustrations trying to get the EPA appropriations bills passed. There were many times and occasions where I felt the rhetoric was totally misleading. There were statements made by others that clean air standards would be lowered, industrial water pollution would increase, toxic waste sites would be ignored. That was never in the budget or the appropriations bill and, unfortunately, there were people who were misled to think that's what we were discussing.

We had too much effort to incite public panic and not enough to focus on the real challenges ahead of us.

We heard over the past year that EPA would have to choose between setting standards for cryptosporidium in drinking water and controlling water pollution. We heard that Superfund sites near day care centers would go unattended. We heard we were cutting drinking water State revolving funds by 45 percent, even when a dime had not been spent on the programs. We heard that air and water standards were being rolled back and that the environmental cop was not on the beat.

None of those statements was true. There has been an effort in this political season by some in the administration to portray the Republican Congress as antienvironment in an effort, perhaps, to win big points at the poll. But, frankly, I think over the long run twisting of facts is counterproductive.

I hope we can engage in a real discussion about the challenges, the priorities, and the dollars available to us because there is much work that has to be done and not a great deal of time to do that.

My time is about to expire. I have had to go ahead in the absence of our ranking member, but I will now call on Senator Leahy for his opening comments, if any.

## STATEMENT OF PATRICK J. LEAHY

Senator LEAHY. Mr. Chairman, I would not have an opening comment to speed things up. But I will be asking the Administrator about EPA plans to support the Lake Champlain cleanup efforts when the management plan is finalized at the risk of breaking precedent and being parochial in this committee.

Senator BOND. Oh, that would be a shock.

Senator LEAHY. I know. [Laughter.]

Senator BOND. I thank the Senator from Vermont.

Our ranking member has joined us. Senator, do you want to make a statement?

## PREPARED STATEMENT OF BARBARA A. MIKULSKI

Senator MIKULSKI. Mr. Chairman, thank you for holding this hearing. I am going to put my prepared statement in the record. I think it is important that we just move ahead with questions in the very condensed timeframe we have.

Ms. Browner, we welcome you. We are glad that you survived snow, shutdown, blizzard, and 13 continuing resolutions.

[The statement follows:]

## PREPARED STATEMENT OF SENATOR BARBARA A. MIKULSKI

Thank you, Mr. Chairman, and welcome to EPA Administrator Carol Browner.

Let me begin by congratulating the Administrator, and all of the dedicated Federal and contractor employees at EPA, on surviving thirteen continuing resolutions and a couple of shutdowns. I know those disruptions took their toll on the Agency's programs, not to mention employee morale. I know that I will fight to make sure EPA—or any other Federal agency—never has to relive that experience.

Let me take this opportunity to thank Chairman Bond for his leadership in bringing the VA–HUD Subcommittee's fiscal year 1996 process to closure. I also appreciate the Chairman's willingness to take the lead in the bipartisan effort to restore funds for the most critical environmental protection programs. We may not have agreed on every program priority, but we were able to set aside those differences and get the job done.

I know that all of us are weary from the never-ending fiscal year 1996 budget season. And now, not even one month after the enactment of the Omnibus Fiscal Year 1996 Appropriations Act, here we are—right back at it on fiscal year 1997.

Is it just a coincidence that we are holding this hearing on the Environmental Protection Agency's fiscal year 1997 budget request, on the same day the Senate votes on a budget resolution that could lead to an erosion of the last month's bipartisan endeavors to restore funds for environmental protection?

Mr. Chairman, I know the American people want an EPA that works to protect the environment. The American people want air that is safe to breathe and water that is safe to drink. They want hazardous and contaminated waste sites cleaned up; they want it done soon and they want it done right.

The American people are opposed to efforts to weaken our environmental laws, and they are opposed to budget cuts that weaken our ability to enforce those laws.

In my State of Maryland, we depend on a clean environment. A healthy environment is critical to our State's economy—from the watermen who harvest crabs on the Chesapeake Bay, to the multitude of small and medium sized businesses that make up Maryland's tourist industry.

Yes—a healthy environment means healthy business, but to make both happen we need to have a healthy EPA as well.

Mr. Chairman, you and I have both supported reforms at EPA—reforms that make sense and provide a coordinated approach to setting standards and enforcing our environmental laws.

But those reforms cannot be implemented if we just roll back resources instead of reinventing programs. I support the President's fiscal year 1997 budget request for EPA, and I will fight to maintain these funding levels.

Mr. Chairman, I know we have a great deal of information to cover in a very short period of time this afternoon. Thank you for holding this hearing today, and I look forward to hearing from the Administrator.

## STATEMENT OF ROBERT F. BENNETT

Senator BOND. I thank, my distinguished ranking member for her excellent leadership by example.

Senator Bennett.

Senator BENNETT. Thank you, Mr. Chairman. I shall make no pretense at not being parochial.

Ms. Browner, you are undoubtedly aware of the correspondence that has been going on between a number of western Senators and your Agency with respect to the correction factor on particulate matter measures. I appreciate the spirit of cooperation that has been shown in the first correspondence we have had on this issue from your Agency, and when the time for questioning comes, I'd like to explore it a little further and have you tell us where you think we are on this.

We are completely satisfied scientifically that the requirement that corrections be made in the readings are causing us to overstate the actual PM–10 quantity in high elevations. And, since the entire State of Utah is, even at its lowest point, 2,000 feet above sea level, this becomes a significant issue for us.

Thank you, Mr. Chairman.

Senator BOND. Thank you very much, Senator Bennett.

Senator Lautenberg.

## STATEMENT OF FRANK R. LAUTENBERG

Senator LAUTENBERG. Thank you, Mr. Chairman. I would ask consent that my full statement be recorded as if read.

Senator BOND. Without objection, it will be so included, as will all of the statements by members.

Senator LAUTENBERG. Thank you. In the spirit of cooperation, I, too, will try to keep my remarks short, as hard as that is. I will just say that I am pleased that Administrator Browner is here. I believe that her budget request for fiscal year 1997 recognizes the importance of protecting our environment and continuing the clean up of hazardous waste sites.

I do, Mr. Chairman. take this moment, however, to say that it would be hard to classify this Congress as one of the most environmentally friendly, contrary to the observations already made. I look at the riders that were put there in the House and the restraints that have been attempted to be put on the Agency, whether it has to do with toxic waste cleanup, or toxic materials listing, or the right to know law.

## PREPARED STATEMENT

But I do feel, Mr. Chairman, in fairness to you, that you have worked hard to try to deal with the problems of environmental cleanup, and I respect and appreciate your efforts. But we will be discussing the issues, I hope forthrightly, without fear of stepping on toes. It is not my intent to initiative arguments but, rather, to clear the air.

So thank you very much.

[The statement follows:]

### Prepared Statement of Senator Frank R. Lautenberg

Thank you, Mr. Chairman. I'm pleased to welcome Administrator Browner, and I am especially pleased about her budget request for fiscal year 1997. It recognizes the importance of protecting our environment and continuing the clean up of hazardous waste sites.

This has been a very difficult year for EPA. The agency has been shut down because of Congress's inability to agree on a budget. It has endured threats of significant layoffs. And its work has been under attack on many different fronts from opponents on Capitol Hill.

Under the circumstances, it's not surprising that the agency is facing a brain drain as its best and brightest look for work outside of public service.

Mr. Chairman, we owe a debt of gratitude to EPA employees, most of whom are committed public servants. And I am hopeful that this year we can resolve the agency's budget in a way that will make it easier for EPA to do its business.

Clearly, the agency now faces many substantial burdens. Air pollution continues to plague our urban and suburban areas. Although new cars emit 90 percent less pollution today than they did 20 years ago, vehicle miles have more than doubled during this time. The agency is responsible for making our water more clean, though the remaining problems—consisting mostly of pollution run-off from urban areas and farms—are harder to regulate than the traditional end-of-the-pipe regulation from industries sources.

Toxic waste cleanup through the Superfund program now generally is in the construction rather than the study phase. And since construction is more expensive than studies, the need for funding is growing. In the case of Superfund, level funding means slower clean ups, and hampered ability to protect our neighborhoods and groundwater from hazardous waste.

In addition, the Agency is responsible for conducting more risk assessments than before. Risk assessment science is very complicated and very expensive, requiring specialized expertise. Although these assessments should help prioritize the agency's activities, they require significant funding to be done properly.

Congress also has demanded, in a bill sponsored by the chairman and which I supported, that EPA convene special panels to consider how each regulation affects small business.

All these new demands on the agency may be good ideas, Mr. Chairman. But they are all resource intensive. They have costs.

So, Mr. Chairman, the needs at EPA are great. And we in Congress have a responsibility to do what we can to meet those needs, and to protect our environmental heritage. I look forward to working cooperatively with you and our distinguished ranking member, Senator Mikulski, to make that happen.

## STATEMENT OF CONRAD BURNS

Senator BOND. Thank you very much, Senator Lautenberg.

Senator Burns.

Senator BURNS. Thank you, Mr. Chairman. We welcome Ms. Browner here today. I, too, will submit my formal statement. I think, basically, what we're looking for is some priority setting on what we are going to do and how we are going to do it with the funds that we have.

I think it is time that we really work and get serious about working with our State and local governments to solve some problems, instead of creating more.

## PREPARED STATEMENT

I have many examples that I would like to show you in the State of Montana about the great judgment of the EPA, and one of these days we will sit down and laugh about it. It wasn't a very funny thing at the time. It still is not. But, nonetheless, I would like to bring those before you, though this is not the forum in which to do that.

Thank you.

[The statement follows:]

### PREPARED STATEMENT OF SENATOR CONRAD BURNS

Mr. Chairman, thank you for holding this hearing today. I look forward to looking more closely at the fiscal year 1997 Environmental Protection Agency budget request.

Once again, I believe we should turn our attention to setting priorities. Where should we put the limited fiscal resources?

I think there is a fundamental problem with EPA. Sure, every American wants environmental safeguards to protect their families and communities. There is no argument there. But, just how should this be accomplished?

EPA needs to turn away from a command and control attitude and instead help folks comply with necessary environmental laws. We need to concentrate on providing real flexibility to our states. Getting environmental issues resolved within Montana and allowing Montanans the freedom and flexibility to get the job done is what we should strive to provide.

Along those lines, we need to turn our focus away from regulating and fining communities. Sure we need to have an enforcement program at EPA. But should the focus be there? I don't think so. We need to concentrate on providing a service to people and helping generate sound science so proper decisions can be made.

Mr. Chairman, I look forward to hearing from Administrator Browner today and for continuing to work with you.

## STATEMENT OF BEN NIGHTHORSE CAMPBELL

Senator BOND. Thank you very much, Senator Bond.

Senator Campbell.

Senator CAMPBELL. Thank you very much, Mr. Chairman. With your permission, I would like to submit a complete statement for the record.

Senator BOND. It will be accepted.

Senator CAMPBELL. I have a number of questions, but I know you are going to try to get us out of here very shortly. So I will also ask if I can just have Ms. Browner answer those in writing and will just limit my comments to a couple of things.

I can tell you, Ms. Browner, that I don't think you are going to like to hear what I am going to say.

I want to address my concerns specifically to the role of EPA to fully implement the Colorado Ute Indian Water Rights Settlement Act that was passed by this Congress and signed into law by the President in 1988.

As you are aware, I have been working on that project for a good number of years, as many people have in southwest Colorado, and that settlement provides the two Colorado Ute Indian Tribes with fresh water, which one tribe, by the way, has been waiting for almost 120 years, having only ditch water and a gravel backwash filtration plant for all the years they have been in Towaoc, CO.

At the same time, it preserves the ability of the non-Indian community to use water which they have relied on for generations, non-Indian farmers, particularly. The cornerstone of that settlement act was timely construction of the Animas-La Plata project, which is a Federal project authorized by us and supposedly to be implemented by the Bureau of Reclamation, as you probably know. But we now find ourselves in a situation where the EPA, in my opinion, is really muddying the waters.

Recently, as you probably know, they issued a press statement somewhat opposing the project, and, from my perspective, all it did was scare the devil out of people, saying, in fact, that it would be too expensive to build now at the cost of $710 million and, second, addressing tribal concerns, saying that it would have an adverse impact on the Navajo Nation.

I would point out, first of all, the reason it cost $710 million is because of the constant roadblocks that this administration has thrown up to stop the project. Second, I would also point out that the Navajo Nation, under Chairman Hale, wrote to the EPA supporting the project. So part of this is absolutely wrong and erroneous.

Third, they imply a veiled threat in the last paragraph, and I will read that:

> If no significant changes are made by the Bureau of Reclamation before the final EPA statement for the project is published in early April, EPA has the option to refer this matter to the President's Council on Environmental Quality.

I take that as a threat, and I have to tell you, very frankly, that I think you are out of line in that agency, taking a position that has nothing to do with the EPA from a financial standpoint. It is a Bureau of Reclamation project. They are authorized to build it, and for the EPA to say that it is or is not cost efficient just seems to me that it is not in your bailiwick.

In any event, I think you have caused a lot of problems in our part of the country because of that. We have people all stirred up out there now about whether it should have been done or whether it should not, even though it was voted by almost a unanimous vote by the people in southwest Colorado to support that. It was supported by two States, by two tribes, and nine Federal agencies and passed by this Congress into law.

## PREPARED STATEMENT

The roadblocks that the EPA is setting up to stop it tell me that there is a concentrated effort on the part of some of the people in the administration not to do what is right but to simply stop growth and to stop a water project.

Thank you, Mr. Chairman.

[The statement follows:]

### Prepared Statement of Senator Ben Nighthorse Campbell

Mr. Chairman. Thank you for conducting this hearing on the fiscal year 1997 Budget request of the Environmental Protection Agency. I would also like to welcome Carol Browner, the Administrator of the EPA, to the committee this afternoon.

I have briefly read through your testimony and I note the efforts you are making to trim your workforce and provide greater flexibility to states and tribes in the administration of their respective revolving fund allotments. This is commendable, however, I would like to make a few brief comments on an issue that continue's to concern me that I believe runs contrary to upholding your trust responsibility to tribal governments.

I address my concerns specifically to the role of the EPA to fully implementing the Colorado Ute Indian Water Rights Settlement Act of 1988.

As you may be aware, I have been integrally involved in the implementation of the Colorado Ute Indian Water Rights Settlement Act of 1988 (Public Law 100–585). The settlement provides two Colorado Ute tribes with water which had long been denied them, while at the same time preserving the ability of the non-Indian community to use the water on which it had relied for generations.

The cornerstone of the settlement act is the timely construction of the Animas-La Plata Project, a federal reclamation project authorized in 1968, and subsequently in Public Law 100–585. Currently, the Bureau of Reclamation (BOR) is in the process of completing National Environmental Policy Act (NEPA) and other environmental compliance requirements for the Animas-La Plata project. Well, eight years have come and gone and construction of the project has yet to begin.

While I am generally hesitant to cast blame, I do have serious concerns the EPA has done very little constructively to move this project forward. For example, as recently as March 20, 1996, the EPA issued a press release as to why your Region 8 office disagrees with the project. I must say I was a bit surprised with the reasons for doing so.

The Regional EPA office cited two primary areas of concern:

—Economic Concerns—EPA cites Bureau of Reclamation data that puts the price tag at $710 million, and this, according to the EPA is too expensive.

—Tribal Concerns—EPA asserts the 1988 Ute Settlement fails to account for the adverse impact to the needs of the Navajo Nation.

My only reaction to these assertions is to wonder why the EPA is commenting on the economics of the project? Is this not the Bureau of Reclamation's jurisdiction. During this process, the EPA's primary role, as it should be, is to look at the environmental elements ONLY!, not to comment on what is clearly within the BOR's jurisdiction.

In addition, it appears the EPA is now in the business of pitting tribes against one another, suggesting, in this case, the Navajo Nation is opposed to Colorado Ute Settlement Act and the construction of the Animas-La Plata project. The fact is, the Settlement Act of 1988, was approved unanimously by Congress.

Mr. Chairman, I have a few questions I would like to submit for the record addressed to Administrator Browner regarding the implementation of the 1988 Ute Settlement Act.

While the purpose of this hearing is to hear testimony on the EPA's fiscal year 1997 budget, I feel compelled to emphasize, the clear agenda of the EPA in this instance relating to this project. EPA certainly has an integral role in this project but it should do so in a manner that is grounded in good science versus that of political motivation.

### STATEMENT OF CAROL M. BROWNER

Senator Bond. Thank you very much, Senator Campbell.

Ms. Browner.

Ms. Browner. Thank you, Mr. Chairman. I want to thank you, Senator Mikulski, and all of the members of the committee for the opportunity to be with you today.

Let me begin, Mr. Chairman, by thanking you, by thanking Senator Mikulski and all who worked so hard to ensure that ultimately

EPA would have the resources, would have the tools to do the job that, I think we all agree, must be done on behalf of communities across this country, on behalf of families across this country.

I think we all agree it was a difficult 6 months. It, fortunately, ended with an EPA budget that we believe will allow us to do the job the American people expect. I want to thank you, Mr. Chairman, for your leadership in bringing that to closure.

We are pleased to be here today to discuss the 1997 budget. I will be very brief. I would ask that my entire statement be inserted in the record.

Senator BOND. It will be made a part of the record in full. Thank you.

Ms. BROWNER. Thank you. I am joined by Fred Hansen, Sallyanne Harper, and a number of our Assistant Administrators. If I might, I would call on them during specific questions for detailed responses.

Senator BOND. We would be happy to have their assistance.

Ms. BROWNER. The budget before you, the President's 1997 budget for the Environmental Protection Agency reflects the President's continuing commitment to protect the public's health and to protect our environment while balancing the budget.

This budget shows, once again, that we can balance the budget over 7 years and that we can do it in the right way. It reflects the President's determination to cut the deficit but, at the same time, to invest in the American people, to invest in our future, our health, our air, water, and the land that we all share.

EPA came into existence 26 years ago; 26 years of bipartisan effort have resulted in tremendous progress in protecting the public's health, protecting our environment. There is no doubt about it: Today the American people enjoy safer air, cleaner water, toxic emissions from factories have been cut in half, lead levels in children's blood have been cut by 70 percent.

Despite the progress of the last 26 years, I think it is also fair to say that the job is not done. I have yet to visit a city, a State, a community where the people believe their air is too clean, their water too safe, would we please go away, would we cease to guarantee them the protections that they have every right to demand of their Government.

## BUDGET PRIORITIES

This year's budget continues the administration's commitment to meet Americans' public health and environmental challenges. To do so, we target our resources to the highest risks to public health. We take actions to safeguard, to secure our future, and we use common-sense strategies to provide these protections.

First is targeting the highest risks to public health in our environment and setting the standards to address them. To ensure safe drinking water for all Americans, this budget directs resources to protect the public from cryptosporidium, microbial contaminants, and disinfectant byproducts.

To provide every American with healthy air to breathe, we direct our resources to dangerous fine particulate pollution and smog.

To clean up our rivers, lakes, and streams, we direct our resources to control pollution discharges and polluted runoff. We continue our work on site-specific efforts, including the Great Lakes, the San Francisco Bay Delta, and the Chesapeake Bay.

We strengthen our communities by directing resources to revitalize the Brownfields; the abandoned, contaminated land that lies idle in far too many communities across this country.

We continue to make Superfund work faster, fairer, more efficiently, to clean up contaminated sites and return them to productive community use.

Second, we take steps to secure our future so that we can pass on to our children a safe and healthy world. We direct resources to protecting our children, expanding health effects research, and risk assessment, specifically designed to take into account the special vulnerabilities, the special exposures for our children. They are smaller than us. They are growing. They respond differently. Let's protect them and, in so doing, protect the population at large.

We invest in the President's climate change action plan. Through our STAR Program, Science to Achieve Results, we continue to reach out to bring the best and the brightest in the scientific community, wherever they may be, to the work that we do, to the scientific research that is the backbone of the decisions that we make.

Third, and finally, we direct our resources to common-sense strategies, to cost-effective solutions. We direct our resources to the strong enforcement of this Nation's environmental laws, sending a firm message that pollution does not pay, ensuring the environmental cop stays on the beat, and for those companies that do invest in meeting the standards, a level playing field—a fundamental fairness.

## PERFORMANCE PARTNERSHIPS

We have strengthened our partnerships with States, tribes, local governments. We provide them funding in the form of consolidated grants, called performance partnerships, thanks to the work of this committee. We give them the money to use as they see fit to meet the environmental priorities of their State.

We expand the public's right to know. Through our Small Business Compliance Program, we give honest small business owners the help they need to obey the law, to protect their communities, waiving penalties where appropriate, using the resources to prevent a problem in the future.

## POLLUTION PREVENTION INITIATIVES

With the common-sense initiative, through project XL, through our environmental technology initiative, we work with industry to find new answers, to find innovative efforts to prevent pollution before it starts.

We have engaged in an extensive regulatory reinvention effort at EPA that will literally save more than 10 million hours for businesses, communities, and States by cutting paperwork. Through the common-sense initiative, through project XL, we are finding the new solutions to this generation of environmental problems.

## PREPARED STATEMENT

In closing, Mr. Chairman, we present you with a budget that, in an era of limited Federal resources, will allow us to do the job the American people have every right to expect their Government to do; to protect those things which we all share—our air, our land, our water, and the health of our children.

Thank you.

[The statement follows:]

## Prepared Statement of Carol M. Browner

Mr. Chairman, I appreciate and welcome the opportunity to appear before you and the Members of your Subcommittee to present the fiscal year 1997 budget for the U.S. Environmental Protection Agency, (EPA). The President's 1997 Budget Request of over $7.0 billion for EPA reflects the President's continuing commitment to protect the environment while balancing the budget.

This budget shows once again that we can balance the budget over the next seven years, and we can do it the right way. It reflects the President's determination to cut the deficit, but at the same time to make investments for the American people and in our future—to invest in public health and in the air, the water and the land we must all share.

As a result of a generation of bipartisan effort, the American public now has safer water and cleaner air. Toxic emissions from factories have been cut in half and lead levels in children's blood have been cut by 70 percent. Despite the progress made over the past 25 years, there is still much work to be done.

The American public expects us to meet new challenges and come up with innovative, yet, low-cost solutions. EPA is moving toward a new, comprehensive approach to achieve results that are cleaner, cheaper and smarter for the environment, for our business partners and for America's future. We are working to achieve the best environmental results at the least cost—for real people in real communities.

During the State of the Union Address, the President challenged businesses and communities to find cheaper, more efficient ways of meeting government regulations and pollution standards. I support this challenge and have initiated programs at EPA such as Project XL and the Common Sense Initiative which are designed to give state governments and regulated businesses more authority, responsibility and flexibility. The President and I believe that through bipartisan efforts, environmental protection will expand the economy and create more jobs over the long run.

This comprehensive approach challenges the Agency to invest its resources in the highest-risk environmental problems, to strengthen its partnerships with state and local governments as well as the private sector, and to develop new management and accountability systems. All of these recommendations are supported by the National Academy of Public Administration (NAPA) in its recent report, *Setting Priorities, Getting Results—A New Direction for EPA.*

At the same time, we are challenged to strengthen our science, provide increased flexibility and opportunities for innovation to improve the current regulatory structure, and work with businesses to help them comply with the law prior to taking any enforcement actions. I adamantly concur with the President's statement to American business—"If you can find a cheaper, more efficient way than government regulations require to meet tough pollution standards, do it—as long as you do it right." We are ready to work with you and our partners in industry to help create a better way of doing business.

This year's budget continues the Administration's commitment to meet America's public health and environmental challenges. To meet that challenge, we must target the highest risks to public health. We must take steps to secure our future. And we must use common-sense strategies to protect the public and our environment. I would like to outline several examples of initiatives, programs and projects developed by the Agency in its quest to meet the challenges that will take us into the 21st Century.

### RISK AND SETTING ENVIRONMENTAL PRIORITIES

We used relative risk as a key factor in setting many of the priorities in our 1997 Request. We have several initiatives underway that improve the use of relative risk to prioritize activities in specific programs. For example, we are targeting enforcement actions in an attempt to both meet the mandates of the Pollution Prosecution

Act and deter violations potentially causing the most serious risks to public health and the environment.

The Office of Research and Development (ORD) has made great strides in identifying areas of highest risk. To evaluate and rank potential research topics in developing the fiscal year 1997 Budget Request, ORD applied a risk-based, priority-setting process, and used health, ecological, and risk management criteria. Priority was given to research that would make the greatest contribution to reducing the uncertainty associated with risk characterization. This new process of identifying risk encompasses both scientific and stakeholder priorities. It enables ORD to focus resources where they can make the most significant contributions.

Another example of risk-based decision making can be found in our Office of Water (OW). They factored in risk to address the high priority problems of Combined Sewer Overflows (CSO's), Sanitary Sewer Overflows (SSO's) and Storm water in high-risk urban watersheds to reduce the amount of raw sewage overflows in our nation's waters, including such metropolitan areas as in Houston, Texas, Cincinnati, Ohio and Los Angeles County, California.

The Office of Prevention, Pesticides, and Toxic Substances (OPPTS) will invest in reducing health and environmental risks from chemical pesticides by increasing resources for the registration of biological pesticides. Over 50 percent (20 of 40 in fiscal year 1995) of the new active ingredients registered are biological pesticides which are generally considered to be safer than the chemical pesticides they replace. We expect higher percentages of biological registrations in 1996 and 1997. Getting biological pesticides on the market and in use as quickly as possible reduces exposures to farm workers and the nation's food supply.

EPA's Office of Air and Radiation (OAR) will increase its resources in support of the development and implementation of local and regional ozone attainment strategies. Regional office efforts will provide State and non-attainment areas assistance with urban airshed modeling support and with long range transport issues. This effort is complemented by the regulatory reinvention efforts designed to address $NO_x$ issues, particularly in the Northeast and Midwest.

The fiscal year 1997 Budget also invests in the most serious health risks, including microbial and disinfectant by-product research. We all remember the tragic loss of life in Milwaukee three years ago as a result of undetected cryptosporidium in the drinking water supply. We can and must prevent any other such occurrence in the future for the sake of our children.

Our efforts to address risk go beyond work in our media program offices. There are a number of cross-agency efforts where technologically we are working smarter in the Agency. In our Office of Information Resources Management (IRM) we are investing in a major effort to consolidate the Agency's various data collections so that duplicative elements are eliminated and reporting requirements are streamlined and clearer to the regulated community. This effort, proposed by the IRM Steering Committee plays a big role in the Agency's regulatory reinvention efforts.

In addition, we are working to expand the range of alternatives for integrating Agency efforts across programs and environmental media to allow for cleaner, cheaper, smarter solutions to public health and environmental problems. In short, EPA remains committed to setting priorities that allow the Agency to apply limited resources where they will gain the most public health and environmental benefits.

## COMMON-SENSE INITIATIVE AND PROJECT XL

Two programs that I am particularly proud of are the Common Sense Initiative and Project XL, two programs which underscore the fact that the government can and does work well together with private industry. These programs are integral components of regulatory reinvention, as they challenge businesses to take more initiative to protect the environment, while making it easier for them to do so. At the same time, these programs challenge EPA to develop strong working relationships with business and industry.

The Common Sense Initiative (CSI) and Project XL are voluntary pollution prevention partnerships where EPA works with regulated businesses and affected communities to find cleaner, cheaper, smarter ways of achieving our public health and environmental goals. Under CSI, EPA has invited a broad spectrum of stakeholders to the table, including industry, state governments, environmentalists and labor unions to look at a full range of environmental regulations affecting six specific industries.

An example of such an industry is the Metal Finishing Industry. The CSI Metal Finishing Sector works with local metal finishers in such cities as Detroit and Cleveland, to develop low-cost pollution prevention technologies. Implementation of these technologies enable these small businesses to meet or exceed chrome MACT standards, at less cost.

The CSI workgroups are committed to improving and simplifying the permitting process, identifying more flexible ways of achieving compliance, and designing integrated systems for reporting environmental data. The CSI approach tears down the traditional barriers to innovative pollution control and prevention technologies.

Project XL is one of EPA's most fundamental reforms. As a voluntary partnership, it provides companies the opportunity to set aside EPA rules if they can design an alternative system that will be both cheaper for the economy and cleaner for the environment. EPA has set a goal of beginning 50 XL projects by the end of 1996.

Last November, the President and Vice-President announced the selection of the first Project XL candidate pilots. The positive response by the companies involved has been extremely encouraging. With such companies represented as Intel, 3M and AT&T, as well as smaller firms, we are already seeing how much can be accomplished if people have the opportunity and flexibility to design innovative strategies for environmental management.

## PERFORMANCE PARTNERSHIPS

In an attempt to better target our resources, state-by-state, we are again proposing to offer States and tribes Performance Partnership grants. To put it simply, these grants are designed to consolidate funding streams, cut micromanagement, and focus programs on results.

This initiative allows states to combine media specific grants into one or more partnership grants that either address multimedia needs or target federal funding to the state's highest media-specific environmental needs. I want to thank you for your support and inclusion of this initiative in your 1996 bill. I think we both can agree that this is one of the finest features of that bill, and your commitment and support has been instrumental in this effort. Beginning with the Colorado and Utah agreements, we plan to implement this program in several states in fiscal year 1996. It is estimated that over twenty states will implement this program in fiscal year 1997.

In addition, EPA is proposing that states and tribes receive the flexibility to merge their Clean Water and Drinking Water State Revolving Fund allotments into a single capitalization grant. This way, they can distribute the financial assistance according to combined priority lists that include Clean Water and Drinking Water projects.

## AGENCY MANAGEMENT

In accordance with NAPA report recommendations, the Agency is designing a better way to formulate its annual budget and use risk as a tool to determine budget priorities. This new approach will analyze program performance and cost, integrate program activities with the Agency's mission and goals, and formalize a system of Agency-wide accountability.

EPA's recent report, *Managing for Results,* summarizes the Agency's efforts to improve and fully integrate our planning, budgeting, and accountability processes. The new management system detailed in this report will allow EPA to set priorities based on risk and other relevant factors and change those priorities in response to new demands.

## CONCLUSION

Before I conclude, I would like to thank both you and Senator Mikulski for the additional funds provided in the Omnibus Bill. Through your efforts, we are in a better position to keep our commitments to the environment and the nation.

In summary, all of us at EPA, our private sector partners, and Members of Congress alike recognize the challenges that we face in an era of reduced federal resources. We are attempting to find the most efficient way to invest our resources, while at the same time, protecting the nation's health—the health of our families, the health of our communities the health of the environment and the health of our economy.

Our proposed workforce level in fiscal year 1997 is 17,951. This is a decrease of over 900 workyears from our fiscal year 1996 President's Budget Request. This is yet another illustration of how committed we are, as an Agency to meet the President's goal of downsizing government.

The President is committed to balancing the budget and doing it now. Last fall, the President and Congress agreed to balance the budget over seven years, using the assumptions of the Congressional Budget Office (CBO), and to protect the President's priorities. This budget fulfills the President's commitment to that agreement.

I stand ready to work with you on our fiscal year 1997 Budget. In spite of budget constraints, we need to invest resources sufficient to enable us to protect the American public and to meet the challenge that President Clinton put forward in his State of the Union Address, "to * * * leave our environment safe and clean for the next generation."

I am delighted to answer any questions you may have at this time.

## PRESIDENT'S 6-YEAR BUDGET PLAN

Senator BOND. Thank you very much, Madam Administrator, for your presentation. Since you've talked about the overall budget picture, let me deal with that one first because I think that has to be the framework within which we conduct all of these discussions.

As you know, the President's 6-year budget plan submitted to Congress included a discretionary cut spending trigger if Congressional Budget Office [CBO], identified by the President as independent score keeper, did not believe we would reach a balance by the year 2002.

Upon completion last month by CBO, it certified the plan was $81 billion short of balance. It, therefore, triggered certain tax increases and cuts which would have to go into effect. That is when my colleagues on the minority side in the Budget Committee and on the floor offered the President's budget and included the $67 billion in triggered cuts.

Now this would reduce the EPA numbers for 2001 and 2002 down to the point where the budget for 2001 would be $6.6 billion and for 2002, $6.3 billion, a cut of some $2.4 billion.

Would someone put up the chart on the EPA numbers?

I am concerned about what steps you are taking to plan for those reductions and how do you propose to deal with the budget request which shows the ramp-up that is in the red, and then a steep drop-off in the last 2 years?

How would you deal with that kind of reduction in the EPA budget in 2001 and 2002?

Ms. BROWNER. Mr. Chairman, I believe that what you are suggesting or what has been suggested by some is an approach that would essentially be a pro rata cut across the board in terms of discretionary spending.

What the administration has said is that as we move forward over the next several years, it will be important to look at what agencies can most appropriately absorb or take a reduction, and which agencies need to be continued at current funding levels to meet their responsibility.

There has not been an agreement in terms of an across the board reduction, which is, I think, what that red line would recommend. In fact, it's quite the contrary. The President and the administration have said repeatedly that, as we move forward to implement a 7-year balanced budget, essential to the implementation is environmental protection and preserving the resources necessary to guarantee public health and environmental protections.

Senator BOND. Well, unfortunately, the only information we have in front of us is the President's budget. That has to be the official position. Here it says on page 13 of the budget supplement: "In case new assumptions produce a deficit in 2002, the President's budget proposes an immediate adjustment to the annual limits or caps on discretionary spending, lowering them enough to reach balance in 2002."

How is this going to be done?

Ms. BROWNER. It doesn't target the specific programs. However, when you play the numbers out, you have to make the application for budget purposes. But the President and the administration have also said that a priority is environmental protection. As you look at whether or not additional reductions may be necessary, you have to take into account at that point in time the challenges faced by the individual agencies and departments, the needs of the American people, and that environmental protection and the preservation of environmental protection is absolutely essential.

Senator BOND. So have you received any assurances that the Environmental Protection Agency will not be cut?

Ms. BROWNER. I feel very comfortable that in the President's 7-year balanced budget, EPA will have the resources to do the job the American people expect. Absolutely.

## REDUCTIONS TO ACHIEVE A BALANCED BUDGET

Senator BOND. We are getting to the point now where, to get to a balanced budget in 2002 the VA budget would have to be cut by some $12.9 billion from, essentially the current year's spending.

In this committee, the Secretary of the VA has told us that he has been assured no cuts will be made there.

We have also had the testimony from the Administrator of NASA as to where NASA's budget would have to be cut by $3 billion, and he has assured us that there won't be any cuts in NASA.

Now is there another budget that we don't know about, another budget that does show how these cuts are allocated? The President can only claim to balance the budget if he has real numbers that show a balanced budget.

Ms. BROWNER. The President's budget, which has been subjected to the analysis of many, many people, does achieve a balanced budget in 7 years. It does it while protecting the work essential to public health and environmental protection.

I understand the concern within this particular subcommittee, perhaps, as to allocations and resources that must be divided among a number of very important agencies and departments. But the budget looks much more broadly across the Government as a whole, and recognizes, as this administration has recognized from day one, that there are some things that, quite frankly, Government may have done historically that are not necessary in the future. There are other things where Government must maintain a strong role. One of those is environmental protection.

Senator BOND. But we don't have any other plan to get there. We are in the position where we put 100 dollars' worth of goods in our grocery cart, we have everything we want, we get to the checkout counter and we only have $80. You cannot get out unless you shoplift with $100.

When the President presents a budget, he is supposed to tell us what can be in that grocery cart when we've only got $80 to pay for it. We have presented, and I am sure we will be attacked—and I say we as the majority—have presented a budget that shows how we would spend the $80 if $80 is all we have for groceries.

Are we to believe that there is another plan somewhere that allocates priorities and says other than what this budget says, that there will be a 10-percent and an 18-percent cut? Is there a second set of books that shows what these priorities are?

Ms. BROWNER. As we are all aware, the process is ultimately an annual process, and as we move toward the balanced budget that we all agree is so essential, we will make decisions—Congress, the administration—on an annual basis about how to continue our progress and how to secure the ultimate goal of a balanced budget. That will mean in some instances that certain agencies and departments may take a reduction, others will not.

The President has consistently said that in his balanced budget, he will ensure, as we move through the appropriations process on an annual basis, that the resources are there, the tools are there to guarantee the public health and environmental protections to ensure that EPA can do the job the American people expect.

I have no reason to doubt that.

Senator BOND. My time has expired. The only thing I can say is with the budget we have been presented, unless you take across-the-board cuts, unless somebody is willing to say where the cuts are, this is not a balanced budget and we need to deal with reality.

I turn now to my distinguished ranking member, Senator Mikulski.

## ENVIRONMENTAL PROTECTION AGENCY'S CORE PROGRAMS

Senator MIKULSKI. Thank you, Mr. Chairman.

We in Maryland really appreciate the effort that you have made in Maryland in helping us clarify controversial issues, like wetland policy, as well as the funding of the Chesapeake Bay Research Program that has the support of Presidents Reagan, Bush, and Clinton.

Madam Administrator, I am interested in this, which is what you would define as EPA's core programs, that no matter what we do we must fund them and operate them, that they are core to the mission.

I would like you to list those programs and then tell me if you feel there are adequate resources to meet those core objectives and what would be the range below which you could not go and meet that core set of responsibilities, responsibilities that the core must do—not should do or would like to do, but must do, those programs.

Ms. BROWNER. The easiest way to think about the EPA budget is really in three pots. One is Superfund, toxic waste cleanup. The dollar amount that is before you will allow us to build on the successes of the last 3 years by speeding the pace and cutting the cost of cleanups.

The second pot are the dollars that we provide to States and local governments. We think it is extremely important that there be a Federal, State, and local financial partnership in guaranteeing public health and environmental protection.

For example, there is the clean water State revolving fund to allow the upgrade of waste water treatment facilities to keep raw sewage out of our rivers and lakes. Second, we want to thank all of the members of this committee, most particularly the chairman and you, Senator Mikulski, for your commitment to the drinking water fund. This is a brand new fund. Never before were Federal dollars available to local communities to upgrade their drinking water systems.

We cannot take for granted the safety of our drinking water in this country any more. We have to be vigilant if we are going to guarantee clean water for people to drink. Part of that is a financial partnership with State and local governments. In addition, dollars that are provided to States, tribes, local governments, to help them develop the capacity, the know-how, and the programs to assure more day to day responsibility is included in the second pot.

The third pot is literally everything else we do, from the science, the research necessary to prevent problems in the future and to solve problems today; enforcement, important to ensuring a level playing field; the voluntary or the partnership programs that we engage in with business to find new solutions; the services, the day-to-day operation of the Agency falls into the third category.

Within that category, we have made some very difficult decisions to ensure that we are meeting the greatest risks.

Senator MIKULSKI. OK. So those are the three categories.

Can we come back, then, and discuss the funding for Superfund. As you know, the authorization seems to bog down. I know this is of tremendous interest.

I think maybe Senator Lautenberg will be asking about the Superfund.

Senator LAUTENBERG. I promise not to ignore the subject. [Laughter.]

### STATE AND LOCAL GOVERNMENT—WATER ISSUES

Senator MIKULSKI. How about then we go on, in the limited time we have in this condensed hearing, to State and local government concerns, the water issues, the drinking water, and so on.

Do you have enough money to do it and what couldn't you go below?

Ms. BROWNER. The request before you is a total of $3.4 billion. Almost one-half of EPA's budget will flow out to States, local governments, and the tribes.

We believe that the drinking water request and the clean water request for waste water and sewer treatment will allow us to have a genuine financial partnership with States and local governments to upgrade the facilities and to provide the necessary protections.

Senator MIKULSKI. You are down for $2,852,000,000—something in the President's budget. Is that your number?

Ms. BROWNER. I'm not sure I understand the number.

Senator MIKULSKI. What I am operating off of is the EPA request.

Ms. BROWNER. Oh, there are two different numbers. Yes, I understand what you are saying.

The account in terms of State, tribal, local governments is a total of $2.8 billion. There are additional dollars that flow to the States through the "Superfund" account and some other accounts that bring the total to $3.4 billion. We believe that is a significant commitment in terms of the financial partnership with State and local governments.

Senator MIKULSKI. What happens if that were to be cut? Say it was cut $500 million?

Ms. BROWNER. Well, depending on where you take it from, it has very real repercussions. If you take it from the drinking water program, which I don't believe you would do given your support, it means that communities cannot upgrade their systems in a timeframe which I think many of them would like to do.

If you take it from the wastewater treatment facility fund, the clean water fund, it means more delays in terms of removing the raw sewage, the overflows that, quite frankly, affect far too many rivers and lakes.

Senator MIKULSKI. So what you are saying is that this is the number below which would be very serious consequences.

Ms. BROWNER. Right, yes.

Senator MIKULSKI. When we look at the third pot, you say that this is the environmental technology, science and tech. Did you say enforcement is also in that?

Ms. BROWNER. Yes.

Senator MIKULSKI. Looking at the program here, I gather that is where it talks about science and technology, the Environmental Management Program. What is your number on that third pot?

Ms. BROWNER. The science and technology request is $578 million. The enforcement request is $309.9 million. The total in terms of that portion for the 1997 request is $3.4 billion—for what we refer to as the operating programs. About $675 million of that, goes to States, local, and tribal governments.

Senator MIKULSKI. To do what?

Ms. BROWNER. For a variety of purposes—for example, to implement clean air programs. It is the money that flows to the States so that they can assume greater day-to-day responsibility for the implementation of public health and environmental programs. Again, here we have made a number of very difficult decisions in terms of the high risk concerns we will address.

Senator MIKULSKI. My time is up. This is why I am moving along.

I was trying to get a lot of questions in the short time.

Mr. Chairman, I know my questions are up. If we have time for a second round, I will come back to this.

Just one quick word. I have asked your office for a description of how the Manifest Program works in terms of from manufacturing to distribution of hazardous and toxic waste. I am told that there is no written, visual flow chart, that they wanted to bring up five notebooks and discuss it with me.

Could I have a picture of what we do on that because I am looking at it for some other issues.

INFORMATION HAS BEEN PROVIDED TO COMMITTEE STAFF

Mr. HANSEN. We will do so.

Ms. BROWNER. I am sure we can help you there.

Senator MIKULSKI. Thank you.

Thank you, Mr. Chairman.

Senator BOND. Thank you very much, Senator Mikulski.

Senator Bennett.

## PM–10 MEASUREMENTS

Senator **BENNETT**. Thank you, Mr. Chairman.

I would simply make one comment on your line of questioning, that there seems to be a coincidence in the various charts you put up here that all of the downward lines that get to the balanced budget in 7 years occur after the next President has left office—whether it is Senator Dole or President Clinton. They all start in the year 2000 and bite in the years 2001 and 2002. I wonder if that is a coincidence, that all of the cuts and all of the difficulty occurs after the winner of the 1996 election has left office.

Ms. Browner, let's go to the subject I raised earlier.

As I say, the correction factor that is currently required by EPA with respect to particulate matter measures causes us, taking the Salt Lake area as an example, to overstate our PM–10 concentrations by 8 percent in the winter and 14 percent in the summer.

In other words, we are forced to report imaginary PM–10 numbers, rather than real PM–10 numbers because the numbers have to be adjusted as if they were measured at sea level, and Salt Lake City is about 4,200 feet above sea level.

We have provided the Agency with scientific evidence, scientific papers that include this quote: "There is no justification for adjusting sample volumes to constant temperature and sea level pressures."

As I said, I appreciated the response from the EPA indicating that you were seriously looking at this and recognized that, in fact, these things may be over stated.

I wonder if you have any further comment you could be making here.

Ms. **BROWNER**. Senator, as I think you are aware, we are in a process of looking at the national ambient air quality standard for PM–10. There is a large volume of scientific evidence that suggests greater health risks for finer particulate matters than we had originally anticipated.

We have asked our Clean Air Act Science Advisory Group, a panel of experts from outside of the Agency, who assist us in dealing with complicated scientific areas, specifically look at the question you are raising with respect to your State. They are in the process of looking at that. They are also in the process of assisting us in looking at the particulate issue more broadly, in terms of whether or not the standard should be lowered or should be strengthened.

## WAIVERS ON TESTING DRINKING WATER

Senator **BENNETT**. Thank you. I appreciate that. We are grateful to you for the way you have responded to this issue.

You made the comment in your opening statement that there are no communities that think their air is too pure or their water is too clean.

Going to your comment about the dollars to State and local governments, I can introduce you to some mayors who say no, our water is not too clean, but it is certainly clean enough, and we are being forced to test for contaminants which physically do not exist west of the Mississippi River, and it is costing us money, time, and effort.

I hope as these dollars go to the State and local government that you also have a dialog with the folks in the State and local governments, so when they say to you why should we spend *x* dollars testing for this contaminant that is not physically available in our part of the country, you would be willing to say yes, you really do not need to perform that test, instead of, as has been the case, yes, we have a national standard and we are going to require everybody to do the national standard regardless.

Ms. BROWNER. Senator, we have run a very aggressive program to inform mayors, to inform the local drinking water systems of the ability to get a waiver.

Under the current law, there is a requirement that the testing occur unless certain factors can be demonstrated and then a waiver can be granted. We are more than happy to call any of the cities from which you have heard this and work with them to apply for a waiver. We have done it in State after State very successfully. I could not agree with you more.

We believe the drinking water law should be strengthened. We believe there are refinements that can take place so that resources are going to the contaminants of the greatest concern.

So if you have a particular city in mind, please let us know. We will call them this week, sit down with them, and develop a waiver if it is appropriate.

I might add, just very briefly, that your State was one of the very first States to get one of our performance partnership grants. They received it May 17. It is a large amount of money, $1.3 million, that is available to them to address their greatest concerns, their highest priorities.

We appreciated a very good working relationship with the State in developing that and are very pleased to provide them with that flexibility.

Senator BENNETT. I thank you.

Mr. Chairman, thank you.

Senator BOND. Thank you very much, Senator Bennett.

Senator Leahy.

### LAKE CHAMPLAIN

Senator LEAHY. Mr. Chairman, the EPA region I staff has done a very good job, I should hasten to add, in my part of the world, in chairing and managing the Lake Champlain management conference. I have talked to a number of them and they have been very, very helpful.

You know that Lake Champlain is the largest body of fresh water in this country outside of the Great Lakes, and it has a scenic beauty that is a major tourism attraction. But it also has some very significant commercial value, too.

If we are going to go with the final approval and implementation of the final pollution prevention plan for Lake Champlain, I want to know what EPA will do because their leadership role has been essential so far. What will regions I and II do to complete a comprehensive two State management plan and then support its implementation?

Ms. BROWNER. I could not agree with you more about the importance of the resource. It is essential to the health of that area, both in terms of the public's health but also the economic health.

We, through your office, were able to secure funding in the 1996 budget to allow EPA to continue in the leadership role. We envision in the course of this year that we will use those dollars to initiate implementation activities, build on the capacity that already exists at the local level, and monitor extensively the in-lake water quality, which is going to be important as we move forward in the coming years.

Senator LEAHY. Is it EPA's intention, then, to continue resources for fiscal year 1997 and fiscal year 1998, as least as you plan now?

Ms. BROWNER. We would like to work with you to ensure that the resources are available to build on what we have done previously.

### FEDERAL ENERGY REGULATORY COMMISSION OPEN ACCESS RULE

Senator LEAHY. Let me ask you another question about the FERC rules, their open access rule. I am concerned that it is going to encourage coal fired powerplants. A lot of these old midwestern powerplants are often exempt from some of the standards of the Clean Air Act. They produce oxides of nitrogen, mercury that is toxic, heavy metal particulates which cause various illnesses and sometimes death, and carbon dioxide.

Now in the Northeast and other parts of the country, we are spending billions of dollars on pollution control in our own States, but the prevailing winds go from west to east, and if we get nailed by what is done out in the Midwest, it does not do us much good.

What can you do to protect us in the Northeast? Can we set up new Federal air standards, can we put a cap on State emissions? How do we do this?

Ms. BROWNER. Senator, we share your concern in terms of the potential long-term air quality ramifications of open access.

We believe there is a way to both preserve air quality and to secure the consumer benefits. We made a number of recommendations to FERC while they were engaged in their rule making process. Subsequently, we did file a referral with the President's Council on Environmental Quality because of our concern over the long term in terms of increases in $NO_X$, for example.

We detail our concerns to them in the letter and would be happy to provide it to the committee. In the letter of referral, I detailed how we thought these problems could be avoided. We believe that the rule can go forward in terms of the short-term consequences. We don't think that is a problem, but we think some actions need to be taken to ensure no long-term consequences.

For example, through the OTAG process which your State and all of the States east of the Mississippi are now engaged in, including the Midwest States, where these coal fired plants are located, we are encouraged, we are hopeful that we will be able to agree to a cap and trade program for $NO_X$ emissions.

This is an issue that has to be dealt with, we believe, on a regional basis. It cannot be dealt with State by State. We have to look at the attached information comprehensively.

[The information follows:]

## LETTER FROM CAROL M. BROWNER, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY

MAY 13 1996

Kathleen A. McGinty
Chair of the Council on
Environmental Quality
Old Executive Office Building
Room 360
17th and Pennsylvania Avenue
Washington, DC 20500

Dear Ms. McGinty:

Pursuant to Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) has reviewed Order No. 888 providing for open transmission access, proposed by the Federal Energy Regulatory Commission (FERC) on March 29, 1995, and adopted on April 24, 1996. EPA believes the open access rule will play a key role in making electricity markets more competitive, encouraging greater efficiency in electric power production, and reducing electricity costs for American consumers.

EPA has determined that the open access rule is unlikely to have any significant adverse environmental impact in the immediate future, and that in light of its anticipated economic benefits, implementation of the rule should go forward without delay. EPA has also determined, however, that under certain circumstances discussed below, the open access rule could lead to increases in air pollution in the future that would have impacts which are unsatisfactory from the standpoint of public health or welfare or environmental quality.[1] Consequently, as required by Section 309(b) of the Clean Air Act, EPA hereby refers the open access rule to the Council on Environmental Quality (CEQ). In EPA's view, these potential future impacts can be addressed through a combination of actions by EPA and States under the Clean Air Act and, if those actions are unsuccessful, further actions by FERC under its authorities. The reasons for the referral and suggested steps to address potential pollution increases are discussed below.[2]

Substantial concerns have been raised that the open access rule could in some circumstances cause significant increases in air pollution, both nationally and in particular regions.

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[1] EPA is conducting a review of the modeling conducted by FERC in the FEIS. EPA expects to complete and release this review shortly. The review will be available to FERC for consideration in shaping its response to this referral.

[2] EPA raised these concerns in comments on FERC's proposed open access rule on August 7, 1995, and in comments on the draft environmental impact statement on February 21, 1996.

FERC's Final Environmental Impact Statement (FEIS) represents a substantial effort to examine these concerns. The FEIS correctly indicates that the air pollution impacts of open access will depend on the interaction of fuel prices, technological developments, and decisions taken by businesses and regulatory bodies. In some scenarios presented in the FEIS, the rule could lead to emission levels below those otherwise expected. In that case, the American people will receive both the economic benefits of competition and cleaner air, and there would be no need for further FERC action.

In other scenarios, however, the FEIS acknowledges that the rule could cause emissions to be higher than otherwise expected in future years, and this referral is addressed to those circumstances. In EPA's judgment, the FEIS provides a reasonable basis for concluding that there are not likely to be any significant immediate adverse impacts from the rule. On the other hand, EPA believes that safeguards are needed for the longer term to make sure that open access achieves the economic benefits of competition without increases in pollution.

Potential future increases in emissions of oxides of nitrogen (NOx) due to open access are a matter of serious national importance because they would exacerbate a significant existing national pollution problem that needs to be comprehensively addressed. NOx emissions must be substantially reduced in broad areas of the country in order to meet the national public health protection standard for ozone in downwind States where that standard is currently violated. Current NOx emissions in the eastern half of the United States from electric power plants are approximately three million tons during the summer ozone season. EPA believes that based on the best available scientific information, it will be necessary to reduce these NOx emissions to below one million tons during the ozone season, in order to prevent violations of the ozone health standard in downwind areas in the Northeast and Upper Midwest. Any NOx increases resulting from open access in future years would exacerbate the difficulty of accomplishing the needed reductions.

Potential NOx increases associated with open access will be avoided if the States, working with EPA, successfully carry out their obligations under the Clean Air Act to address long-distance transport of NOx emissions and prevent sources within their borders from contributing to violations of the ozone health standard in downwind States. EPA is currently working with the 37 eastern-most States through the Ozone Transport Assessment Group (OTAG) to bring the best available science to bear on understanding the scope of the long-distance transport problem, and to reach a consensus among the States on measures needed to reduce emissions to meet the public health standard for ozone. Among the measures under active study is a region-wide "cap-and-trade" program for NOx emissions, with reductions from utility sources in the range of 55 to 85% below 1990 levels. The cap would assure the necessary overall pollution reduction, while emission trading would enable sources to reduce the costs of making these reductions, as has been done successfully with $SO_2$

emissions in the acid rain program created by Title IV of the 1990 Clean Air Act Amendments. EPA believes that a region-wide cap-and-trade program of this kind is the best method for achieving the needed reductions.

EPA will use its authority under Title I of the Act to support successful completion of the OTAG process. Those OTAG States which currently do not meet the ozone standard are already under a legal obligation to adopt necessary additional pollution controls and to amend their "State Implementation Plans" (SIPs) by mid-1997. As a further step, EPA will notify the upwind OTAG States that they also need to amend their SIPs and to adopt control measures necessary to prevent contribution to ozone violations in downwind States. While EPA has every expectation that all of the OTAG States will succeed in reaching agreement this year on the needed control strategy, EPA is prepared to establish a NOx cap-and-trade program for the OTAG region through "Federal Implementation Plans" (FIPs) if some States are unable or unwilling to act in a timely manner.

EPA will also initiate a discussion with States and other stakeholders this summer on the desirability and feasibility of implementing an interim cap-and-trade program in order to assure achievement of the full benefits of Federal and State NOx emission measures that are already in place or will become effective over the next several years. These NOx measures generally limit emission rates, not the total tonnage of emissions, and they do not take full advantage of emissions trading. EPA will explore means of converting these limits into an interim cap-and-trade program.

EPA believes the OTAG and Clean Air Act processes, if successful, should mitigate any shifts in NOx emissions that may occur as electric generators and their customers move forward under the open access rule and related measures to increase competition and promote more efficient markets in electricity.

EPA must be concerned, however, about the potential occurrence of future NOx emissions increases in the absence of timely establishment of a NOx cap-and-trade program under the Clean Air Act. Under those circumstances the open access rule would contribute to ozone standard violations in downwind areas. EPA has determined under Section 309 of the Clean Air Act that the open access rule would, under these circumstances, have environmentally unsatisfactory impacts.

If the OTAG and Clean Air Act processes fail to produce the necessary pollution limitations in a timely manner, EPA will call upon all other interested Federal agencies to assist in solving the problem. In this context, FERC could contribute to this effort. As an initial matter, FERC could agree to open an inquiry to further examine issues of mitigation strategies for NOx increases attributable to the open access rule in the event that the OTAG process does not succeed. FERC could also agree to initiate a rulemaking to propose suitable means under the Federal Power Act of mitigating those increases if it became necessary for EPA to propose FIPs under the Clean Air Act. Commitment to take these steps would be an effective signal that the

Administration and FERC share the same resolve to achieve both the economic benefits of competition and the health benefits of clean air.

EPA believes that if FERC made commitments to take these actions if needed, the combination of actions by EPA and States under the Clean Air Act and back-up actions by FERC under its authorities would effectively safeguard against potential adverse environmental impacts due to NOx increases in both the long term as well as the immediate future.

In order to monitor developments under the rule, EPA intends to draw on available information and expertise from the Department of Energy (DOE) and FERC to establish a tracking system combining available information on emissions, capacity utilization, wholesale electricity sales, and other factors. EPA, DOE, and FERC should consult to develop appropriate means to identify effects on emissions attributable to the open access rule.

The potential for future increases in emissions of carbon dioxide ($CO_2$) and other pollutants in some open access scenarios is also a matter of concern. Increases in $CO_2$ would exacerbate the difficulty of carrying out the Administration's commitment to reducing emissions of greenhouse gases under the President's Climate Change Action Plan and the Framework Convention on Climate Change. The Administration is committed to develop appropriate post-2000 targets, timetables and policies under the Framework Convention on Climate Change. EPA is also ready to work with DOE and utilities to enhance existing voluntary commitments on $CO_2$ as a safeguard against emissions increases associated with open access.[3]

The steps EPA is taking under the Clean Air Act, combined with those that could be taken by FERC in response to this referral as suggested above, would permit us to achieve both the economic benefits of competition in the electric sector, and timely attainment of healthy air for all Americans. In short, in this way the Administration can assure the American people the benefits of both competition and clean air.

Sincerely,

Carol M. Browner

Carol M. Browner

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[3] $CO_2$ could also be covered by the tracking system suggested above. Measurements or estimates of mercury emissions could also be integrated into such a tracking system.

Senator LEAHY. What is your computer program, a regional oxidant model, something like that? Are you using the regional oxidant model to determine effects?

Ms. BROWNER. Yes, right; we are using the regional oxidant model, which is the scientific one.

## FEDERAL ENERGY REGULATORY COMMISSION ENVIRONMENTAL IMPACT STATEMENT—MODEL USED

Senator LEAHY. Would that be used to determine what the effect of this FERC rule is?

Ms. BROWNER. Is that the model that would be used to measure?

Senator LEAHY. Yes.

Ms. BROWNER. Let me ask Mary Nichols if she might answer this.

Ms. NICHOLS. Senator, the environmental impact statement that was produced by FERC used another ozone model, called the UAM model, for that purpose. There has been quite a bit of modeling done under different assumptions.

We commented on FERC's EIS, that we felt that they had not used all the assumptions that they should. They did some additional modeling. We have now reviewed their additional modeling and we have just completed our analysis.

Senator LEAHY. You have to understand that a lot of us in our part of the world have the image of somebody putting a powerplant right on their eastern border, knowing that the plumes will continue east.

They have a State that is very clear of pollutants from it. But everybody downwind of them—and that is all of us in New England—really get clobbered by it.

Ms. BROWNER. Right.

Senator BENNETT. We would never do a thing like that.

Ms. BROWNER. We are not worried about you.

Senator BOND. Just send it back. [Laughter.]

Senator LEAHY. If we had some way of sending it back, I would be happy to. But it's sort of like when the Sun Belt States sucked all the money out of the Northeast to pay for their savings and loan criminal activity whereas we had a balance the books attitude. Now we are getting nailed with this, too.

We really want to make sure because, otherwise, it will be costly. There could be some very significant efforts on legislation. Thank you.

Ms. BROWNER. Mr. Chairman, if I might just say in response very briefly, we share your concern. That is why we took the referral to CEQ. We are encouraged that FERC will adopt an order addressing our concerns. We will move forward, as I said, through OTAG and other vehicles to address this, and if need be, FERC will act to ensure that the environmental concerns, the air quality concerns in terms of an increase in $NO_X$ emissions, do not materialize.

Senator LEAHY. Thank you.

Thank you, Mr. Chairman.

## MIDWESTERN STATES—ACID EMISSIONS TRADING

Senator BOND. Thank you, Senator Leahy.

Just in case anybody has a short memory out there, you may recall that the midwestern States gave and gave at the office very heavily. I had the pleasure of being involved with Senator Byrd trying to develop an acid emissions trading system which would keep the expensive, new equipment required by the aggressive campaign of the easterners to impose acid rain emissions on the Midwest, which was accomplished just prior to the release of the NAPA study, showing that it was not such a problem. But we will debate that.

Senator LEAHY. Well, as the chairman will recall, we sometimes take a different attitude, depending on whether you're the dumper or the dumpee. We see the midwestern States as the dumpers, and we know there is a great belief in the trickle down theory with some out there. But we are getting trickled on a little more than we would like. [Laughter.]

Senator BOND. Well, we were forced to and made major changes. We will have an opportunity to discuss it later.

But let us hear from the distinguished Senator from Montana, who brings us only pristine wilderness.

Senator BURNS. Let's not get into that, either. [Laughter.]

We're just trying to sell some low sulfur coal that will solve all of these problems if we can get into that kind of technology.

Ms. BROWNER. And we would welcome that.

## SUPERFUND REAUTHORIZATION

Senator BURNS. Ms. Browner, I want to make a short statement. I think we are moving into a new era as far as environmental protection. I think if we want to really safeguard the gains that we have made in the last 20 years that you expounded on so ably, and to make sure that we don't lose the leadership in the world as far as the environmental protection is concerned, I think we are going to have to look to do some things differently. Some of the laws that we have are very good laws. But we are getting to the point now where, in the growth of Government, they become unfriendly. As far as being user friendly, they just won't work.

I want to ask you, does the administration really, sincerely support the reauthorization and the reform of the Superfund that is working its way through committee right now?

Ms. BROWNER. Absolutely, positively.

Senator Burns, there is probably not a single piece of legislation in the Congress that I have spent more time on. I have worked for 3½ years to see this law rewritten. We believe it needs to be rewritten.

But I didn't stop there. I didn't just work with Congress to fashion a bipartisan bill and continued to work since the elections with Senator Smith, Senator Chafee, Senator Lautenberg, and Senator Baucus. I also undertook a set of administrative changes. Within the context of the existing law, we have pushed the envelope. We have taken 10,000 little parties out. We have delisted 27,000 sites.

We are working with mixed funding to get to cleanup more quickly, to resolve the cleanup, to complete the cleanup more quickly.

We want nothing more than to see the Superfund law rewritten, to have the President sign a bill that will allow us to do the job, that will ensure that the largest polluters pay their fair share, and that those small parties who unfairly were trapped in Superfund were taken out; that the cleanup is done to protect the communities' health, to protect their ground water, to protect their future.

Senator BURNS. Just 3 days ago, there was a court decision with regard to *U.S. Government* v. *Olin*, and in light of that, we are seeing more and more of these kinds of decisions on retroactivity going way back to a Superfund site and attaching people that really did not own the property at the time the damage was done, or the alleged damage—let's put it that way.

Will these decisions affect the way that you will administer Superfund?

Ms. BROWNER. The decision as we understand it—and it was only just handed down on May 20, so all of the lawyers are still reviewing it—speaks to the commerce clause and the issue of intrastate waste.

I think it is fair to say that we are perplexed by the court's decision and are in dialog with the Justice Department on whether or not an appeal should be taken.

We have our General Counsel, Jonathan Cannon, here, who I know would be more than happy to speak to it. But this is a very strange decision and it is not a decision or a rationale that we have seen in other courts across the country.

## SUPERFUND COURT DECISIONS AND RETROACTIVITY

Senator BURNS. The reason for my statement at the opening is that we are going to see, I think, some more of those kinds of decisions.

I'll say that I don't want to lose the gains that we have made in the last 20 years. I think we have to change our attitude, and one of them is that we have to start working more closely, and I think probably in the Superfund reform that is in committee now says that we have to work with State and local governments. They have to have more inputs on some of these very contentious things.

Right now, I heard a very enlightening description of the Superfund Act the other day, where it says it is the only law that was ever passed that basically wasn't not a law but was a suggestion.

So the lawyers have gotten all the money and we have cleaned up very little.

Ms. BROWNER. Senator Burns, I do not deny and I don't think anyone would deny that the original implementation of the Superfund Program 15 years ago left an awful lot to be desired. We had the unfortunate consequence of those who were given the responsibility not sharing the goals of the program. One of the individuals actually ended up going to jail. I mean, it was a very unfortunate beginning to the program.

The Superfund Program today, within the existing law—which is a law we think should be changed—is fundamentally different than the program of 5 or 10 years ago because of our administrative changes. It is not everything it could or should be. That will require an act by Congress, and we are very supportive of that.

But we have cleaned up more sites in 3 years than in the first 12 years of the program. We have removed 27,000 sites from the

Agency's Superfund inventory. These sites are no longer stigmatized by the fear of Federal liability. We have taken out 12,000 little parties.

We are doing everything we can to get these sites cleaned up, and put back to productive use for the communities.

We do believe at the end of the day that there is a responsibility for the largest polluters to pay their fair share to clean up the problems they have caused.

Senator BURNS. Well, I am just kind of concerned about that decision. This has been like the third or fourth one, I think. But I will not have any questions for that at this time.

My time is up. I thank the chairman very much.

Senator BOND. Thank you very much.

Mr. CANNON. If the Senator pleases, we have taken a look at the decision. It is, based on our analysis, a clear outlier from the mainstream of decisions. We think it is wrongly decided and we would recommend an appeal to the Department of Justice.

Senator BOND. Thank you, Senator Burns.

Senator Lautenberg.

### SUPERFUND FINANCING

Senator LAUTENBERG. Thank you, Mr. Chairman.

For the benefit of colleagues on this committee, to reinforce what Administrator Browner said, there is a lot of work going on to reauthorize Superfund, to make the changes, to make it more efficient, and that includes, obviously, the majority leadership in the person of Senator Chafee and Senator Smith, who is chairman of the subcommittee that I used to head. We have been working very, very hard to try to iron out the problems that exist so that we can get on to the results we want.

I am pleased to say that there has been a significant amount of effort to try to arrive at a consensus.

I don't know that we will be able to do it, but I would say, again, for the benefit of my colleagues on the other side, who have asked appropriate questions, there is a lot of work going on to try to come up with a bill and we all want to see that happen.

In that context, I would like to ask the Administrator a question that relates to the financial part of the equation here because that is the mission.

First of all, I would just issue an editorial statement on my own that says if we are concerned about veterans' health—and I share the chairman's concern about veterans' health needs and other programs that will have to be financed out of this subcommittee—I would hope that one day it is recognized that the American people are as concerned, more concerned, I believe, with the safety and security of their families from environmental invasion than they are from missile invasion and other military-type programs. So perhaps we can all work together one day to knock down those fire walls, get rid of the limitations on discretionary spending, and say that we are going to spend it to preserve the health of our citizens, especially our young ones and our elderly.

So when we look at the portrayal here, I believe, Mr. Chairman, that that does include the assumption that there is a $5 billion reserve that will be taken out of the Superfund trust fund. But that is not going to go to more efficient cleanup. Therefore, that line is a bit erroneous on the chart there, the green line, because that money will simply go to pay for the assumption that the polluters are going to be free of much of their responsibility and the $5 billion will go to make up for the money they would have spent.

So it amounts to a substantial reduction in the funds that we now anticipate would be available for environmental protection.

Is that the way you see it, Administrator Browner?

Ms. BROWNER. We are concerned, Senator, that, in a reauthorization of Superfund, there be adequate dollars to ensure that we can fulfill our responsibility. It is our understanding that the budget includes a proposal to increase Superfund funding by $700 million.

We would be concerned as to where that comes from in the overall discretionary caps. Does it come out of EPA's base, which would not be acceptable?

Senator BOND. Madam Administrator, if I may interrupt, that is in one of those amazing budget moves that those of us on the Budget Committee have to stand back and applaud. That goes directly to the Superfund Program outside, over, above, and around the caps.

Senator LAUTENBERG. Those extra funds were deeply appreciated and I commended the chairman in earlier meetings for that.

### SUPERFUND ADDITIONAL FUNDING

Senator BOND. It is money that will go to Superfund cleanups and it is not within the discretionary caps.

Ms. BROWNER. I apologize, but just as a point of clarification, Mr. Chairman, would it be in addition to the baseline funding for the Superfund Program, the $1.3 billion?

Senator BOND. It is additional funds that are available for Superfund——

Ms. BROWNER. Outside of the budget.

Senator BOND [continuing]. They are not, those funds, if the Superfund is reauthorized and a tax is enacted, those dollars will go to Superfund cleanup.

Ms. BROWNER. My concern—and I apologize, but just to be sure we have been clear—is that I understand that from the tax, from the fund that is generated, an additional $700 million would be made available. But that word, "additional," is important to us. If it is going to mean that at some point the EPA takes a reduction in order to not have its totals run higher, then it is something we obviously would have to oppose.

If it means the Superfund Program takes a reduction in its current level of funding, then it would be something we would oppose.

But we understand, and what I want to say in closing is we just had a very brief conversation with some of your colleagues about this and raised several questions. They said they would work with us so that we could better understand the Budget Committee's commitment.

### URBAN BUS RETROFIT PROGRAM

Senator LAUTENBERG. Because of the pressure of time, I would ask a question, Madam Administrator, about the program that would limit emissions from buses in connection with the Clean Air

Program. There is a report due from EPA by July 1, as I understand it. Is that correct? This is a program to limit emissions from buses that would be in conformity with the Clean Air Program. Is there not a report due on the Urban Bus Retrofit Program?

Ms. BROWNER. We will certainly provide the report. We have done a lot to work with the diesel engine manufacturers to advance the technology to develop a cleaner engine. Having done that, we now need to see a turnover in the fleet to achieve the benefits. We would be more than happy to supply that report.

[The information follows:]

### URBAN BUS RETROFIT/REBUILD PROGRAM

This summer, EPA will publish in the *Federal Register* the post-rebuild particulate matter emission levels achieved by the lowest emitting technologies certified for urban buses. To be considered for inclusion in this notice, such technologies must be certified by EPA prior to July 1, 1996, as meeting the emissions and cost requirements of EPA's Urban Bus Retrofit/Rebuild Program regulations.

Transit operators affected by the Retrofit/Rebuild Program who choose to comply with the particulate averaging option, will use the post-rebuild particulate matter levels published in the *Federal Register* to calculate their actual fleet-wide average particulate emission level.

EPA will review particulate reduction technology that is certified as of July 1, and will publish the *Federal Register* notice subsequent to this review. A copy of this *Federal Register* notice will be forwarded to the subcommittee immediately upon publication.

Senator LAUTENBERG. I just want to say in my remaining minute that there is a company in New Jersey that has developed a device that would eliminate much of that pollution. But the Agency cannot be ready by July 1, and much of that is due to the fact that we impeded EPA's work by the shutdowns, by the reductions in their staff workdays.

I would hope that perhaps we could get a waiver on that date, to permit this company to get the product certified that would help to reduce the pollution substantially.

Mr. Chairman, thank you very much.

Senator BOND. Thank you very much, Senator Lautenberg, and we do appreciate your work on the authorizing committee, particularly on the Superfund, which is a very difficult measure on which we are pleased to work with you.

Senator Campbell.

Senator CAMPBELL. Thank you, Mr. Chairman. I know we are running late.

Senator BOND. We have about 12 or 13 minutes. If I could get a ride on the back of your motorcycle, we can make it in less than five.

Senator CAMPBELL. I will make that offer right now. [Laughter.]

### ANIMAS-LA PLATA: NEPA AUTHORITY

Ms. Browner, I have a couple of questions that I think are important to get on the record.

First of all, I want to refer again to this news release sent out by region VIII of the EPA in Denver that I alluded to a while ago.

When they sent that out, did they send it out with your authority or prior knowledge?

Ms. BROWNER. The regional offices do not clear, if you will, their press releases through headquarters.

Senator CAMPBELL. So you didn't know about it?

Ms. BROWNER. No; I did not know about it. I would be more than happy to take a look at it.

Senator CAMPBELL. OK, I appreciate that. Thank you for that candid answer.

Let me ask you, do you know of any section of the law that gives EPA authority over tribal water rights or tribal economies, because that was also alluded to in this press release?

Ms. BROWNER. Again, my knowledge of it is the citations, the quotes, that you read. EPA does have specific statutory authority to evaluate projects in terms of their environmental consequences under the NEPA law and under section 309 of the Clean Air Act. In fact, EPA is required to comment on all draft EIS and make our comments available to the public. We have done so in this particular case.

I think you are probably aware that we have suggested that it may be appropriate for CEQ to look at the concerns that we have. However, in the meantime, we have been able—just to make sure you know this—by engaging in dialog with various parties, to secure an agreement to delay that decision until August 26 of this year. It had originally been set for an earlier date.

Senator CAMPBELL. To delay which decision?

Ms. BROWNER. Whether or not EPA seeks a referral because of our concerns.

Senator CAMPBELL. I see—until August 26. Do some of the parties you are referring to also include the tribes or the State of Colorado?

Ms. BROWNER. Yes; as I understand it. I did have a meeting with a number of individuals who have been working on this issue within the Agency just in the last 2 weeks. They have been in dialog with the tribes and with the bureau. They are looking at the concerns of EPA in terms of the project and the impact on the environment.

### ANIMAS-LA PLATA: COST OF PROJECT

Senator CAMPBELL. OK. I appreciate that. Just one final question.

One of the reasons I get so upset about this is the amount of taxpayer money we have already spent so far when people talk about things not being economically feasible. You probably know that we have already given the tribes something like $57 million of taxpayers' money in order to get them to drop the lawsuit in the first place, the lawsuit against the Federal Government, to get their water rights, which I think they have every strong case of winning on if they go to the Supreme Court.

Second, the State of Colorado has already spent $15 million more in building a pipeline out to the tribe that I described a while ago, at Towaoc, the Ute Mountain Utes. You tell me, if this thing falls apart, if this thing unravels based on EPA opposition, what responsibility is it or where do you come in in the EPA to repay that money? I mean, do we just lose that $72 million of taxpayers' money because it comes unraveled or what?

Ms. BROWNER. I am more than happy to work with you to better understand what moneys have been paid and why they have been paid. I obviously do not have the knowledge that you have.

The concerns that EPA has are several. We have been willing to engage in a dialog to inform people of what our concerns are. The process is not necessarily a process that moves with the kind of speed that you certainly suggest. I don't disagree with that, but it is an important process. It is a check and balance in a complicated system.

Senator CAMPBELL. Well, that check and balance was in the original legislation. This thing was supposed to have been done by the year 2000. It is already 8 years behind schedule. In the original agreement, if it wasn't done by the year 2000, the tribes had a right to back out and go ahead with the lawsuits.

Ms. BROWNER. I understand.

Senator CAMPBELL. I certainly understand you not having been involved for years and years like some of us have with this, but there is no question in my mind that you have some people in the Agency speaking for you without knowing what they are talking about and certainly you not knowing what they are talking about.

Ms. BROWNER. Well, Senator Campbell, let me be very clear. I support my regional Administrators. I support my regions. I stand by that press statement, although I did not see it before it went out.

Senator CAMPBELL. Then I have to tell you, and you, too, Mr. Chairman, that by golly, next year, when we deal with their budget if we take a $70 million loss to the taxpayers, I am going to suggest that we reduce the EPA's budget by the same amount to offset what the taxpayers have put into this project.

Thank you, Mr. Chairman.

## SUBCOMMITTEE RECESS

Senator BOND. Thank you very much, Senator Campbell.

I want to thank you, Madam Administrator. With the interest we have, unfortunately we have a vote-a-rama. So we will be voting the rest of the afternoon.

We look forward to working with you to see if there is another convenient time when we can reschedule the remainder of this hearing.

In the meantime, if you perhaps could get me a letter or statement from OMB that they will not be taking those cuts out of OMB and will, in fact, be finding them someplace else for 2001 and 2002, that would give us a little more assurance as we plan our budget for this year.

Ms. BROWNER. Thank you.

Senator BOND. Thank you very much, Madam Administrator.

This hearing is recessed.

[Whereupon, at 2:20 p.m., Thursday, May 23, the subcommittee was recessed, to reconvene at 9:30 a.m., Friday, June 7.]

# DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT AND INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1997

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**FRIDAY, JUNE 7, 1996**

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
*Washington, DC.*

The subcommittee met at 9:35 a.m., in room SD–138, Dirksen Senate Office Building, Hon. Christopher S. Bond (chairman) presiding.

Present: Senators Bond, Stevens, and Kerrey.

## ENVIRONMENTAL PROTECTION AGENCY—CONTINUED

### STATEMENT OF CAROL M. BROWNER, ADMINISTRATOR

**ACCOMPANIED BY:**

- **FRED HANSEN, DEPUTY ADMINISTRATOR**
- **SALLYANNE HARPER, ACTING CHIEF FINANCIAL OFFICER**
- **ROBERT PERCIASEPE, ASSISTANT ADMINISTRATOR, OFFICE OF WATER**
- **ELLIOTT LAWS, DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE**

### OPENING STATEMENT OF CHRISTOPHER S. BOND

Senator BOND. Good morning, and welcome to the VA, HUD, Appropriations Subcommittee hearing on the EPA. We will begin again. This is the fourth time this year the subcommittee has had the opportunity to meet to review EPA budgetary issues, and I am not sure that necessarily it is good, but there has been no lack of interest in this committee on behalf of EPA, and we very much appreciate your returning to be with us again, Ms. Browner. Two weeks ago, as some members of the audience will remember, we convened the hearing, only to be abbreviated by four votes, and we had to cut off the questioning, so we rescheduled this.

I apologize to our EPA witnesses. I particularly want to apologize to my ranking member, Senator Mikulski, who could not be with us today. She very much wanted to participate in the second round. I told her you would probably be delighted to answer her questions at some other time at her convenience, but we did want to cover a lot of things that we were not able to cover in the first meeting, or the last meeting. I guess that was the third.

We have a number of questions. We are going to be joined by several other members who have specific areas of interest. I want to clarify the budget question. We have a number of Superfund site prioritization issues, the status of the various NAPA recommendations, and a number of other things that I think are very important.

### OUTYEAR BUDGET CUTS

First let me ask, we requested that you try to determine from OMB whether EPA would be exempt from the triggered budget cuts of 10 percent in 2001 and 18 percent in 2002. What have you found out on that?

Ms. BROWNER. I think you are aware that OMB Director Alice Rivlin provided a letter to you and several other members with respect to questions of this nature. Director Rivlin pointed out in the letter how the administration's budget would be managed in the outyears and the President's continued commitment to ensure adequate funding for the work that we do in terms of public health and environmental protection.

Senator BOND. So I guess what that means is we can expect a reduction in 2001/2002 under the President's budget plan?

Ms. BROWNER. As Director Rivlin says in the letter, the President would review his decisions on discretionary spending 1 year at a time. This is the same way that this subcommittee and the Congress reviews decisions on a yearly basis in terms of the appropriations bill. Having said that, Director Rivlin goes on to point out that a top priority for the President, for the administration is environmental protection.

### OUTYEAR BUDGET TARGETS

Senator BOND. I have been through all of that and I had a nice long chat with Director Rivlin yesterday afternoon. We realize appropriations are made each year. But we have to frame our appropriations for this year based on the best judgment of the budgetary resources available, whether it is under the congressional plan or under the President's plan, for the 6-year period. Thus, we had this chart the last time, and as best we can determine, under the President's plan this is what will be available following 2000, 2001, 2002. That is the best budgetary estimate that we have to go with at this point.

Ms. BROWNER. If I understand how that chart was developed, and based on the dialog we had at the last hearing, it assumes across-the-board cuts, that each agency, and program would be treated identically. The President and I think Director Rivlin has said on many occasions that within the discretionary portion of the Government budget there are those programs which they believe deserve special attention, which require special resources, and it would not be an across-the-board cut.

### SUPERFUND SITES AFFECTED BY THE BUDGET

Senator BOND. Well, Ms. Browner, I am not going to go into this any longer, but I asked you if OMB was willing to tell us that EPA would be exempt. They are not willing to tell us that EPA is going to be exempt. I have asked them repeatedly if there are certain departments or agencies that are going to be exempt. At this point they have refused to tell us what, if any, agencies or departments would be exempt. Therefore, the only thing we have to go on is applying a trigger as it was indicated in Dr. Rivlin's presentation by OMB.

So this is what we have to work with unless and until we have a different authoritative response from the Office of Management and Budget. We have to assume that they are planning on implementing the cuts as directed by them in their triggered mechanism. So that is what we have to go on. That is the budget we are looking at. If they want to present a budget that exempts some agencies and takes greater cuts out of other agencies, we would welcome having a revised budget plan, but they have not given it to us, so this is what we have to work with as their plan. That is where we are, and we have to assume, as we deal with our appropriations for this year, these are the choices we are looking at.

Now, let me turn to the questions. I am delighted that the distinguished Senator from Alaska is with us. I, before turning it over to him, want to focus on Superfund. The EPA budget request includes $1.35 billion for Superfund, excluding the research transfer, of which $900 million is for cleanup activities. Despite all the rhetoric of last year, the requested cleanup budget is the same as the fiscal year 1996 enacted cleanup budget, and about $200 million less than last year's request.

We have had a great deal of problems with misinformation, misunderstanding, about the EPA funding debate and what happened specifically in Superfund. As you will recall, in March the President visited the Superfund site in Wallington, NJ, the industrial latex site. According to information supplied by EPA, this site was among 68 sites which could be affected by budget cuts. The information was used by administration officials and members of Congress to suggest that work was being halted at these sites because of, quote, Republican budget cuts, closed quotes, and that human health was at risk. Despite the impression created by the President's visit and the various press releases from congressional offices, none of these sites, as I understand it, posed any immediate threat to human health, and preliminary removals had already been conducted to address such risks. Is that inaccurate?

Ms. BROWNER. As you point out, Mr. Chairman, you said that EPA identified 68 sites that could be affected by the budget situation. That is exactly accurate. There are two types of cleanup activities that occur, including what we call large removal actions and fund lead cleanups. Those are the kind of activities that had been planned at a series of sites. The budget uncertainties, and the fact that we had hit the administrative ceiling within the Superfund Program resulted in 68 sites potentially affected, and our inability to do the work we had hoped to do.

Senator BOND. Well, even under the President's budget request, not all of those sites would have been ready to go. Not all of the sites, even under the full request, would have been ready to go, and many of the sites are not even ready to begin construction now. I understand that about 40 percent of the sites will not be ready for action until the fourth quarter of the fiscal year.

Ms. BROWNER. You are right that when we manage the Superfund Program we manage it over the course of a 12-month fiscal program year. There are starts scheduled to begin in the first quarter, second quarter, third quarter, and fourth quarter. However, due to the budget uncertainties in which EPA was forced to function under for almost 6 months, that has had tremendous repercussions across the board. We have sought, and I think in keeping with your direction, to move toward a risk-based prioritization in terms of making difficult funding decisions. These decisions are in part driven by the budget but are also driven by the needs and the demands at individual sites. Now we find ourselves finally with a budget 6 months into the year, with a list of sites that we will now focus our activities on. It is not what it could have been if we had had a budget at the beginning of the fiscal year, that is true.

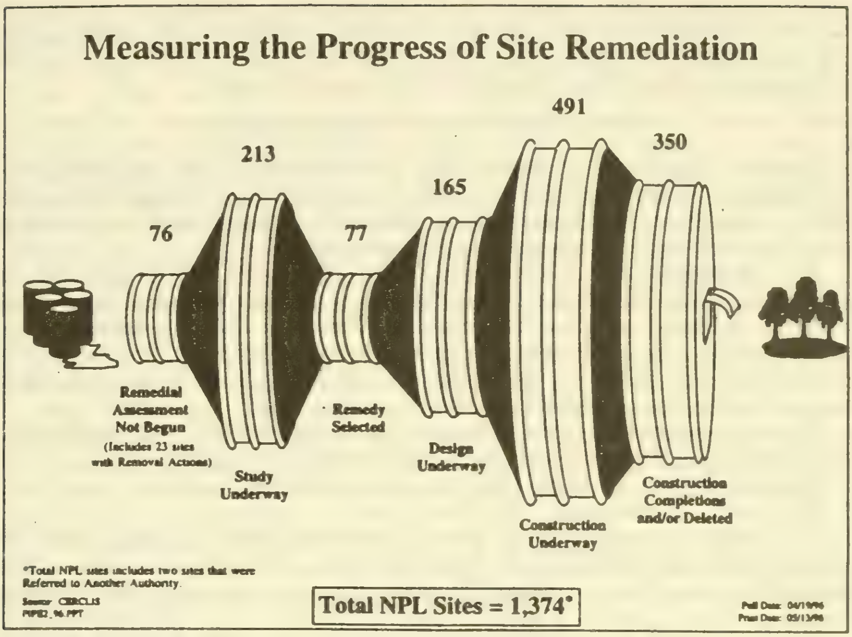
### SUPERFUND SITE PREPAREDNESS

Senator BOND. And as we all know, we passed a budget that was vetoed by the President, and we worked to get a budget, and we passed bills that were vetoed, yet this misleading information was that all of these sites would have gone forward. And frankly, they could not have gone forward, and EPA was not prepared.

Ms. BROWNER. They were all planned to start this fiscal year. The sites are at a point in the process to initiate remedial or major removal actions. We can provide a graphic of the process which we have used before in several hearings. I apologize, we do not have it with us today. The graphic shows how a site moves through the Superfund process. It is a multistep process. You have to come to an agreement about what the cleanup plan is and write up the cleanup plan. Then you begin the process of actually implementing that plan, with a remedial action or a removal action.

The concern for these 68 sites which we spoke to was that these were sites that would be ready for that phase. Without the dollars, we would not be able to do the work and these are the candidates of sites that could be affected.

[The information follows:]



Measuring the Progress of Site Remediation

*Total NPL sites includes two sites that were Referred to Another Authority.

Source: CERCLIS
PIPE2_96.PPT

Pull Date: 04/19/96
Print Date: 05/13/96

SUPERFUND: NEW STARTS

Senator BOND. How many sites under the President's original fiscal year 1996 request would have received funding as new starts?

Ms. BROWNER. The President's fiscal year 1996 request was actually $1.56 billion. That is not what the funding level is now. It is less than the President's request. As we sought to work with you, to reach a resolution of the budget agreement, less dollars were actually provided than had been requested in the Superfund Program. This reduction has had repercussions across the program.

The sites which we hoped to do our work in fiscal year 1996 included what we refer to as fund lead cleanup sites. Those are sites where we use the fund and actually do the cleanup as opposed to the responsible party. There were 21 of those types of sites.

There were also what we refer to as fund removal sites, and this is something that I think you have recommended. Certainly, some of the GAO studies have recommended that we move in this direction. It is a cost-effective, time-saving manner of addressing problems at sites. There are an average of 26 of what we would refer to as large removal projects that we typically work on each year.

In addition, there were 18 sites that had been planned for activity in fiscal year 1995, and for a variety of reasons were carried over into fiscal year 1996.

Senator BOND. So actually, from the information you have provided, the number of sites, as I understand it, had the President's original request been funded at the time would have been about 31 sites that would have started.

Ms. BROWNER. If you add up fund lead cleanups and fund lead removals that is 47 sites. Then there are the 18 sites that were carried over from fiscal year 1995. When we were dealing with the situation that came to pass because of the impasse on the budget, the 68 sites that we spoke of were a combination of the fund lead cleanups and fund lead removals and the carryover.

## THE SUPERFUND LIST PRIORTIZATION

Senator BOND. As I review this prioritization list that you provided us in followup answers from our previous meeting, the number of sites that could have been cleaned up essentially were about the first one-half of this page on attachment 2.

Ms. BROWNER. Mr. Laws, who is the Assistant Administrator for the Office of Solid Waste and Emergency Response, points out that the list is based on that information. This is a list of prioritization, and I think it is a list we all agree is very helpful in how we make complicated decisions. I think it is in keeping with what you have recommended to us, and we are now doing it.

If Mr. Laws could explain where the decisions fall within the list, that might be the most helpful thing, with your agreement.

Senator BOND. All right. Let us hear from Mr. Laws.

Mr. LAWS. Thank you, Mr. Chairman.

What we are saying with the 31 site numbers is, that based on the fiscal year 1996 budget that we have received, that there are probably going to be around 31 sites that we actually will be able to fund.

Senator BOND. In other words, you could take the first 31 on this first page, these are the ones that you would move forward on, is that correct?

Mr. LAWS. I would hate to lock into these precise sites, because we have already had a situation.

Senator BOND. But this is your best estimate?

Mr. LAWS. As of the date the list was prepared, that is correct.

Ms. BROWNER. Mr. Chairman, if I might just say, the point of this list is to give us a basis for making difficult decisions. Unfortunately, things do change month to month with respect to sites. What Mr. Laws is saying is that at this point in time this is the list that we are working from.

As we go out and begin the actual activity, something may have changed which would result in a modest or minor change to the list. All we are asking for is the flexibility to make sure that as we invest the final dollars in the removal or the cleanup activities it is the most sensible thing to do at that moment.

## SUPERFUND SITES FUNDING

Senator BOND. I understand that. But as I also understand, the point that was made in various press releases and others is that under the President's budget 68 sites would have been funded, when, in fact, only one-half would have been, is that correct?

Mr. LAWS. No, sir; we have never made the claim that all 68 sites would have been funded. We responded to a request from the House of Representatives as to the number of sites that were ready to go into construction in fiscal year 1996, and whether or not we would be able to fund those. What we replied to them was that the list of 68 were those sites that would be ready in fiscal year 1996. We did not know if we would have the resources to fund them.

That is the only statement that this Agency made with regard to that.

Senator BOND. Well, I was interested in this because some of your allies in the Senate and elsewhere stated that the 68 Superfund sites were stopped because of the budget impasse, when, in fact, there were obviously a number of these sites that were not ready to go. And now that we have funding, obviously your priorities have to be established. I commend you for having established priorities, but, in fact, the dollars that would have been available under the initial request would have been, at least based on the judgment at the time, been these listed in attachment 2. The industrial latex site obviously does not fall in that priority, that top 31 priorities.

Now, EPA has responsibility for prioritizing those sites, and this effort is going forward at the time, is that correct?

Ms. BROWNER. That is correct. I would just remind the committee that a prioritization of this nature is not a static process, it is a dynamic process. Factors change at these sites, and so we have to have the flexibility as we get ready to invest the resources to make final judgments.

For example, it is conceivable that a site becomes, for a variety of reasons, perhaps more expensive. It is conceivable that because there are opportunities for redevelopment that bringing closure more quickly to an individual site means investing more money on the front end. Those are the kind of flexibilities we are asking for within this risk-based listing.

Senator BOND. All right. I am going to defer now to Senator Stevens, who has a number of questions he needs to ask before he has to depart. Thank you for joining us, Senator Stevens.

## ALASKA WETLANDS INITIATIVE

Senator STEVENS. Thank you very much, Mr. Chairman.

Ms. Browner, I have been spending, obviously, a lot of time on the phone concerning our staggering wildfire in Alaska now, and I have talked to local government people and to the State government people. I am constantly getting questions about the wetlands situation as far as Alaska is concerned. We had a special initiative, you will recall, that was in place just before the turn of the administration which was rescinded that would have allowed Alaska to proceed under a so-called 1 percent exclusion rule as far as the situation was concerned in terms of offsite mitigation. And strangely enough, everything that is burning is wetlands. It is sort of incongruous, but it is really true. The area that is burning now is really the sort of personal family resort areas around a series of lakes that are between Anchorage and Mount McKinley National Park.

Now, what I would like to know is, has there been any result of the task force that was appointed by the President regarding the wetland situation in Alaska?

Ms. BROWNER. The administration undertook what we refer to as the Alaska wetlands initiative to find ways to reduce the regulatory burdens which you and other members had brought forward, while ensuring appropriate environmental protection. A number of action recommendations were made, including the use of general permits, expanded use of general permits, and abbreviated permit processing procedures. I think that we now have enough time that such a review of the progress with respect to the initiative would make sense. We would like to work with you and other members to develop that review to ensure that there is broad stakeholder involvement in terms of understanding how individuals, how parties, how the people of your State feel in terms of what we sought to do and whether or not we have accomplished that.

Senator STEVENS. What have you done in other disaster areas? You had an enormous fire around Yellowstone. They rebuilt without any problems of wetlands. You had an enormous situation in terms of Florida in terms of a hurricane, and a number of disasters. My people fear you. My people fear EPA right now in terms of the ability to rebuild in a short construction season in an area that is devastated. Do you have any disaster exception rule?

Ms. BROWNER. I apologize. I did not understand that you were asking about the permits that will be necessary to the rebuilding activities. EPA has a long record of working with communities where disasters have occurred. For example, as you mentioned, Hurricane Andrew. I was personally involved in those efforts. We will certainly work with the State and through the State to ensure that the families, and the businesses that have suffered, will be given the authority as they need it to move forward expeditiously. We do have a record of doing that, and we are more than happy to work with you.

## WETLANDS WAIVERS

Senator STEVENS. But is there any established waiver situation? All your people are in Seattle now. You have moved the regional office out of Alaska, and we are facing a real serious problem now. I am going up Sunday morning with people from SBA and from FEMA. A lot of other people are involved in trying to accelerate and recognize the fact that whatever is done has to be done in this construction season.

Ms. BROWNER. We are more than happy to be there with you on Sunday. Chuck Findley, who is our Deputy Administrator from region 10 is here today. He reminds me that we still do have 25 of our people in Alaska. Whoever you want on Sunday will be with you.

Senator STEVENS. But they do not have authority to make decisions like this. Who are we going to deal with? And the Governor, I think, would join in the request that we have some kind of recognition that this wetlands area has suffered a great disaster and there ought to be some unique plan here, some waiver system to deal with this so we can proceed and not have the delay and have people say now wait, you have got to get some EPA permits before you do this. I am led to believe you have waived in other areas.

Ms. BROWNER. There are mechanisms, and we are more than happy to sit down with you and the community to make those available. If I could suggest to you that Bob Perciasepe, the Assistant Administrator for the Office of Water, who has worked with you on other issues, will be personally responsible for ensuring that we are there and we are giving the citizens what they need.

I do not think there is a problem here. I understand people have questions. We do have a record of working with people in disaster situations to move expeditiously to ensure they get what they need. We have a number of authorities, and what we would like to do is just make sure that we are bringing all of them to bear appropriately.

Senator STEVENS. Well, I hope that we can formalize this, because we now have moved in an enormous amount of heavy construction equipment. They are moving soil, they are moving trees, they are building dams, they are doing all sorts of things trying to stop this fire. That is a disaster waiver. No one is going to have to have an EPA permit for that, right? But once you go back into your home and you start moving that or you start adjusting fill or you start building a driveway in a different place than it was before—and that is going to happen now—you have got to get an EPA permit, because this is a wetlands area.

My people involved in local government are worried that we are going to have a delay that is going to hold up the reconstruction for this season because of your Agency. I would like an assurance that you are going to send someone up there with authority to enter into some kind of agreement with the State that in a disaster area we are not going to have problems about offsite mitigation, we are not going to have problems about avoidance, and we are not going to have problems about the wetlands doctrine that just plagues our State in normal times. This is not a normal time for that area.

Ms. BROWNER. I could not agree more. Again, as someone who flew to Miami within hours of Hurricane Andrew and stayed for months dealing with wetland issues, I appreciate the fears, and I appreciate the questions. We will be with you on Sunday, we will stay, we will make sure that we have people there who can answer questions, and who can expedite whatever needs to be done. There are some authorities we can use. We will use them to the fullest extent to allow people to do the rebuilding in the shortened timeframe.

## WETLANDS GENERAL WAIVER PERMIT

Senator STEVENS. What did you do in Florida? Did you have a general permit waiver?

Ms. BROWNER. It varied in situation to situation. In some instances, for small landowners, for example, there were waivers that were made available. In other instances we had to rebuild all of the utility lines in a certain part of the city. In that case, we worked with the utility company and turned it around in a matter of days. The decisions had to be made in terms of where the poles would go as you came down to the Florida Keys, which as you know is largely a wetland. I think if you talk to the people of south Florida you will see, you will hear, that there is a way to make this happen. We will have the people there to make it happen: Bob Perciasepe, Chuck Findley, whoever you need. If you can tell us where the meeting is on Sunday, we will talk to FEMA.

We work very closely with FEMA, and I understand your questions, but please hear me when I say we can resolve these issues and we will be with you to resolve these issues.

Senator STEVENS. Well, we are going up Sunday morning. I will be glad to kick someone off the plane and take one of your people along, so long as they have some authority to make some decisions. These people want decisions now.

It is not the same as Florida. This is a construction season now we are in, and by the time October rolls around this is going to be a frozen wetlands. Our construction season for this area is now. And we cannot wait for someone to come up and say we have got to get a plan reviewed in Seattle and got to go to Washington. We want someone to come work with the State. You know our Governor. You know our local people. They are very sound in terms of planning, and they have a real extreme zoning authority up there, as a matter of fact. They can work with you. We have the Corps of Engineers people coming up.

Ms. BROWNER. Why do we not go with you?

Senator STEVENS. Mr. Witt is coming up. They are all coming up because they recognize that the problem of this area is the timeline.

Ms. BROWNER. We will have someone on the plane with you Sunday who can make decisions. I would also just remind you that for small projects, and we will get with you this afternoon in terms of the acreage, for small projects there are no permits needed in a rebuilding situation. We will provide the specifics of that to you this afternoon so you can be aware of that.

[The information follows:]

LETTER FROM H. MARTIN LANCASTER AND ROBERT PERCIASEPE

JUNE 7, 1996.

Hon. TED STEVENS,
*U.S. Senate,*
*Washington, DC.*

DEAR SENATOR STEVENS: We want to emphasize our concern for how serious the situation is in Alaska as a result of the forest fires currently raging in the Matanuska Valley. Today's news accounts indicate that the fires have already consumed upwards of 42,000 acres, destroying hundreds of houses and forcing the evacuation of 3,000 people.

As you stated at this morning's hearing, a critical aspect of the Federal government's response to the fires is to provide the people of Alaska with all the tools they need to rebuild their houses—and their lives—as quickly and easily as possible. Both the Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) can make a key contribution to achieving this goal by ensuring that the necessary Clean Water Act approvals are in place.

To that end, we have already directed Colonel Peter Topp, District Engineer for the Corps' Alaska District, and Mr. Alvin Ewing, Director of EPA's Alaska Operations Office, to use all the tools available, including emergency powers, general permits, and permit exemptions, to ensure that Alaskans affected by this tragedy are able to begin rebuilding as soon as they are ready. In addition, we have instructed them to work with other Federal agencies and the State of Alaska to establish a process to expedite this effort. In addition, Mr. Gregory E. Peck, Deputy Director of EPA's Wetlands Division here in Washington, D.C., is prepared to accompany you to Alaska this weekend to serve as Headquarters liaison.

In closing our agencies are committed to working with you and the people of Alaska to address this tragic situation. If we can be of further assistance, please call either of us or have your staff contact Mr. Michael Davis, Deputy Assistant Secretary of the Army (Civil Works), (703) 695–1370, or Mr. Peck, (202) 260–8794.

Sincerely,

H. MARTIN LANCASTER,
*Assistant Secretary of the Army (Civil Works).*

ROBERT PERCIASEPE,
*Assistant Administrator for Water, Environmental Protection Agency.*

Senator STEVENS. Good. That is good news.

Thank you very much, Mr. Chairman.

Senator BOND. Thank you very much.

Senator STEVENS. I will submit one question. The State wanted to ask a question about the NPDES Program, and I will just submit it for the record.

Ms. BROWNER. We would be more than happy to answer that for the record.

Senator BOND. Thank you, Senator Stevens.

Senator STEVENS. Thank you.

### SUPERFUND SITES: PRIORITIZATION TIMEFRAME

Senator BOND. Let me go back to the prioritization of the Superfund sites. Now, when this prioritization and attachment 2, when was this completed? This is your prioritization list submitted in response to questions of May 9?

Mr. LAWS. We actually began the prioritization process for fiscal year 1996 in late February. We had various iterations of it.

Senator BOND. I am sorry, would you pull the microphone a little closer so I can hear.

Mr. LAWS. I am sorry, Mr. Chairman.

We actually started the process formally in February of this year. There were several iterations of the list. Quite frankly, at one point there were many more than 68 sites. We worked very closely with our enforcement office to remove those sites where we had a fairly strong degree of certainty that the PRP's would eventually sign on to perform the cleanup. Therefore, removing those sites from the responsibility of the fund to perform the cleanup.

I think the list that you have was finalized in late March or early April. I do not have the exact date.

Senator BOND. Well, the point is that this—I am glad you have done it, but it is very late in the day to just now have this prioritization of sites, because this should have been the operating plan under which EPA was addressing these sites. That is the point we have been making all along.

Mr. LAWS. I do not disagree with you, and our initial plan was to have that completed in December. However, with the budget situation we were in, it was impossible for us to get all of our people to discuss it.

Senator BOND. I do not believe that.

Mr. LAWS. Mr. Chairman, what it involves quite frankly, is this is the first time that we are having regions sit down and say that your site is more important to clean than my site. That involves the people who are representing the regions to sit down and understand the risks that are being posed at a site that they have had no dealings with whatsoever. It was very important for us to be able to bring those people together to understand what their colleagues in different parts of the country were facing, and then jointly make the decisions of where it was most important for this Agency to put its resources.

Senator BOND. I am glad you finally did it. This, I think, is a step in the right direction. It is very late in the day coming.

Now, has the prioritization methodology been reviewed by the Science Advisory Board? Have you gotten their views on it?

Mr. LAWS. We have not formally sent it to the Science Advisory Board. We have worked it over with our Office of Research and Development.

Senator BOND. Well, this is into the fourth year, and I would hope that we would have some scientific review of it.

Now, how many of these sites actually pose threats to human health currently?

Mr. LAWS. We can provide that. I do not have that information with me.

[The information follows:]

### THREATS AT SUPERFUND SITES

Every site addressed by the Superfund program poses, to some extent, risks to human health and the environment. In fiscal year 1996, the Agency has specifically employed a national risk based prioritization process with regard to funding NPL and non-NPL construction activity scheduled to begin this fiscal year. This process will ensure that resources will be directed to those new projects posing the greatest risk. Of the projects prioritized to date in fiscal year 1996, 53 projects at 46 sites have current populations presently at risk or will be in the near future (less than 2 years). Immediate risks at the remaining sites would have been addressed with a prior removal or remedial action at another operable unit. As part of our reform efforts, the Agency is committed to the prioritization process for the new projects yet to enter the construction phase.

### SUPERFUND SITES: RISKS TO HUMAN HEALTH

Senator BOND. Based on our previous discussion, I would assume that any sites listed here at the top would be the ones that pose immediate risks to human health, is that correct?

Mr. LAWS. That is correct. The sites that are removals where removal actions have not yet occurred are the ones that we could probably say with certainty without even checking they would present a current risk. The sites which are remedial actions, we might be dealing with more of a future risk, we might be dealing with threatened aquifers, but the immediate risk is probably going to address through a prior removal.

Senator BOND. So if there was an immediate human health risk, that would have been addressed previously?

Mr. LAWS. Definitely.

Senator BOND. So it is fair to say that these do not pose immediate human risk?

Mr. LAWS. No, that is not what I said. No.

Ms. BROWNER. No.

Mr. LAWS. What I am saying is that clearly the large removals probably have an element of immediate threat to human health. The remedial actions, the ones that are after the formal NPL process the remedial investigation feasibility study, the ROD development, those sites most likely have had some previous removal actions taken which would have addressed to some extent the immediate health risk. There might be immediate health risk remaining, but of such a nature that we felt we could wait until the study process and coming up with a final remedy that we did not have to address them immediately. It is conceivable that the immediate risk of some of these sites has been addressed, and what we are talking about is the permanence of the remedy and future risks to human health.

Ms. BROWNER. Mr. Chairman, because we use language in Superfund that is not necessarily logical, unfortunately, when we talk about a removal action, generally that is focused on an imminent and substantial threat to health to the environment. We use that authority which has been granted to us by Congress to go in, and the simple case is to remove the barrels that may be there. As GAO has pointed out in many instances, if we could just make the removal action a little bigger we would actually be done at the site. There are those sites on this list that are removal actions.

Also on this list are what we refer to as remedial actions. A remedial action is designed to speak to longer-term risks. A removal action may have occurred at a site, and then a remedial action would follow. I think it is important to understand that we are using different authorities. At the end of the day, the goal is to protect both in the short term and the long term, and what we are trying to do in this prioritization is make sure that across the board, both in terms of removal actions and remedial actions, is we have an obligation, and that we are responding accordingly.

So there is a mix here which we would be more than happy to go through with your staff and explain which are removal actions and which are remedial actions.

### HIGH-RISK SUPERFUND SITES TO BE ADDRESSED

Senator BOND. Well, I gather on this listing that things that are RV's indicates removal action and RA is remedial action. I understand that. My question was, and this is something you could answer, are there ones on this list where there is an immediate human health risk that is still waiting to be addressed?

Mr. LAWS. I am not really sure I understand your question.

Senator BOND. I mean, on this list do you have sites which pose an immediate risk to human health that have not yet been addressed?

Ms. BROWNER. I think the confusion here, with all due respect, is the word immediate. Every site on here poses a risk. Go back to the barrel example. If there is a barrel sitting out there filled with a highly toxic material, we immediately remove the barrel. Obviously, that is a situation where a child is at great risk. However, a removal action could go beyond that.

Senator BOND. But what I am saying is, and I think we are agreeing, I think we have common ground, if there is a barrel with really bad stuff——

Ms. BROWNER. Get it out.

Senator BOND [continuing]. You got it out.

Ms. BROWNER. Yes.

Senator BOND. And you go back, and probably some has leaked on the ground. That is maybe a remedial action later on. But the real risk to human health is the barrel full of bad stuff.

Ms. BROWNER. That is a good example, because in that case the barrel obviously has to come out. What is left on the ground may or may not be an immediate threat to public health. Unfortunately, there is not a short answer here. It takes a level of analysis and understanding on a site-specific basis to determine what the next action is. There is the obvious, and I guess unfortunately there is the not-so-obvious at these sites, which in fact, can be an immediate threat to public health if not properly managed.

Mr. LAWS. If you are looking for examples, just looking down the list some that I am personally familiar with, there are some sites on this list that are posing current threats to human health. The Michigan radiation site in Benton, MI, is one where the Agency for Toxic Substances and Disease Registry has evaluated the site. They recommended that it be placed on the national priorities list. It is radium contamination, but there have been releases to the environment.

Another one, the Newmark ground water site. Now, I am not sure how you would classify that. That is a site where we are getting ready to put in a ground water control system, and if we do not put it in this year, the planning that went into designing the ground water control system will be out of date. If we cannot get it in and it goes beyond the boundaries that we have predicted at this point, it will be threatening the city's ground water supply.

Senator BOND. You will be ready to go, on Newmark ground water you will be ready to go in July.

Ms. BROWNER. The first operable unit of Newmark is funded now. The second will be funded in July.

Mr. LAWS. It has already received its money for the first operable unit.

Ms. BROWNER. It has received its money for the first operable unit.

Senator BOND. The list shows it will be ready in July 1996.

Mr. LAWS. The first operable unit has been funded.

Ms. BROWNER. It has been funded.

Senator BOND. It has been funded, but you will not be ready until July 1996. OK, but that will happen in July.

Ms. BROWNER. Yes; that will happen.

## NEWLAND TOWNSHIP

Senator BOND. Now, I think part of the problem is there has been a lot of misleading rhetoric about the sites, when they are ready, and where they stand on the priority list. The Washington Post article May 25, talking about the Strassburg dump in Newland Township, PA, it said that the cleanup was delayed because of budget cuts. In fact, the site will be funded, as I understand it, in this year because it ranked high on your prioritization list, but according to this list it will not be ready for action until September 1996. Is that fair, looking at your own list?

It is about 10 or 11 down on the first page of your prioritization list.

Ms. BROWNER. As we reached resolution on the fiscal year 1996 funding, as we came to closure on that, we then went to the list and made decisions about how to expend the dollars. What you see is how the money will now flow out. If we had the money in October it would have flowed out on a different schedule.

Senator BOND. Well, you did not even have the prioritization. You did not have these prioritized until April of this year, and that is one of the points.

Ms. BROWNER. There were prioritizations being developed, and as Mr. Laws said, we had hoped to have them done much sooner. We were not able to because of funding problems.

Senator BOND. I just do not buy that, that you cannot prioritize even though the appropriations bill has been vetoed. When the Agency is operating, you can go forward on prioritization, and that is a function of your Agency.

Ms. BROWNER. I could not agree more. We were operating at reduced levels. We were shut down. There were real repercussions from that. Unfortunately, a lot of things that we would have liked to have done, and that we believe are worthy of doing did not get done in the timeframes we had hoped for. That is the reality.

Senator BOND. I think that we should work on the prioritization lists. I believe that there has been substantial misleading discussion of these problems. We know that you need to establish priorities. The funding has been made available now, you have a prioritization list, we have a list showing where and when you will apply these funds, the prioritization list has now been established finally, and I think this will afford us the means of dealing with the greatest risk. I would expect that you would have that prioritization process reviewed by your Science Advisory Board to make sure that you are utilizing the best science to determine the priorities.

Ms. BROWNER. We are more than happy to continue to work with you in refining this prioritization process. We have sought scientific advice through the Office of Research and Development, and its Assistant Administrator Dr. Bob Huggett, who is a scientist. We are more than happy to dialog with our Science Advisory Board. I think that is a perfectly sensible recommendation.

Senator BOND. We always enjoy talking with you, but I quite frankly think your Science Advisory Board could give you better scientific advice.

Ms. BROWNER. Thank our own scientists?

Senator BOND. Even than our own committee staff can.

Ms. BROWNER. No; I was saying our own scientists. Our own scientists have helped us in developing this, and we are more than happy to also have a conversation with the Science Advisory Board.

Mr. LAWS. If I could just clarify, Mr. Chairman, we actually did use the prioritization process. In fact, you and I had a discussion around the time of the rescission last year that we were looking at that process. When we had the rescission and had to take sites off, we used the same type of prioritization to decide which sites would not proceed in fiscal year 1995. What I was referring to was the formalization of our prioritization panel at the Agency, which lagged until February of this year.

Senator BOND. We have been joined by Senator Kerrey.

## OPENING REMARKS OF J. ROBERT KERREY

Senator KERREY. Thank you very much, Mr. Chairman. First of all, I want to welcome Administrator Browner. I appreciate an opportunity to ask you some questions. And, Mr. Chairman, if you would indulge, I would make what is sort of a repetitive obsessive point for me. The President is requesting $7 billion in his budget. Last year's budget request was $7.3 billion. If you look at the cuts in discretionary spending under the President's balanced budget plan, in year seven they are unsustainable. There is no way that this Congress or the American people would tolerate the kind of cuts that we are forecasting in discretionary spending, and the only way that we are going to be able, unless the American people become wildly enthusiastic suddenly, which I do not think is going to happen, about having their taxes raised, the only way we are going to be able to provide money for discretionary spending, and this is not your bailiwick, it is mine, is to reach consensus to reduce spending on entitlements, whether it is Medicare or retirement or whatever it is. We have got a lot of spending in those two big categories, and we are moving in a direction of not having any money left for not only the protection of our environment but law enforcement and all other sorts of things. So I always like to take an opportunity to beat that drum.

Senator BOND. I would concur with you, Senator, and on behalf of my gone but not forgotten colleague who cochaired the commission with you I would agree with you and commend you for sticking your head in that meat grinder.

### ENVIRONMENTAL TECHNOLOGY INITIATIVE

Senator KERREY. I appreciate it. I was very pleased, as a matter of fact. We got 36 votes. That reminded me of the move Fargo, for some reason. We did get 36 votes on the budget resolution, 20 Republicans and 16 Democrats, for significant entitlement reform, including moving eligibility age. I was very encouraged by that, and perhaps in 1997 we can get 50.

Let me ask you, Administrator Browner, about the environmental technology initiative. It is a huge business market for us. Close to $200 billion of our economy is in the environmental businesses, 50,000 or so total number of businesses in the United States that are involved in such things as technologies to prevent pollution, reducing toxics, energy and nonrenewable resources, and so on, efforts to reduce health risk. We are discovering that these are really high wage, high value added jobs. Some estimates say that it could be a $500 billion worldwide market.

This partnership has invested—ETI has invested in 1994 and 1995, $104 million in 274 partnerships. It has been attacked as corporate welfare from time to time, and I would just like to give you an opportunity to give us some concrete examples on how the private sector benefits and depends on EPA to help it develop environmental technologies.

Ms. BROWNER. I think the most exciting thing about the environmental technology initiative is the ability to really find the next generation of environmental solutions. Many of the companies are young, they are upstart, and they need some small assistance. Perhaps, the companies need verification of their technology to make it marketable, not just domestically but, as you point out, in the international arena. Having the ability to say to a business in another country we, an American company, have been to the EPA, and they believe our technology works is a very important selling point for these companies. I think it is really unfortunate that the United States is not No. 1 in the world market for new environmental technologies. In fact, Japan and Germany surpass us right now in the world market.

We should be No. 1. We are making the better technologies, finding the better answers.

Senator KERREY. We are the No. 1 market, however, for environmental technologies.

Ms. BROWNER. In terms of the export market?

Senator KERREY. Yes.

Ms. BROWNER. In terms of domestic, yes.

Senator KERREY. The domestic market is the largest market.

Ms. BROWNER. This is the largest international market, but in terms of our ability for our companies to sell in the international market, we are not No. 1 on the list.

Senator KERREY. Can you pick a company, describe, maybe, one or two partnerships? Maybe just one, because I have got four or five other questions I want to get to, but I would like to give you an opportunity to come at this argument that sometimes is there, and we are all looking for any example of corporate welfare where taxpayer money is not needed. If the market can do it without taxpayer money, certainly that is what we ought to do. But if you have got some examples of where we have leveraged private capital.

Ms. BROWNER. We could actually provide you with this brochure which shows a number of the projects that we have been involved in across the country, and the partnerships that we have formed. For example, the work we have done with the Chicago Board of Trade in terms of really jump-starting the whole recycling industry and allowing them to become much more competitive. Another example is the work we have done in partnership with the American Furniture Manufacturer's Association, looking to find new technologies, new solutions, to their environmental problems.

## ENVIRONMENTAL TECHNOLOGY INITIATIVE AND RECYCLING

Senator KERREY. The market could not have gotten the capital, the board of trade or furniture manufacturers?

Ms. BROWNER. What was happening in the recycling world was that you had lots of people out there collecting this stuff, but they could not find the people to sell it to. There was no system to move the recyclables once collected. We all heard stories of cities collecting stuff and the papers piling up. What we had to do was connect the dots and streamline the system to allow the market to really become what it could be. That is what we have now done, and we have found with the Chicago Board of Trade, a whole means of doing that, which is not Government run. You should know all we did was come in with a little bit of money, get the private sector to take control of something in a way that benefits everyone, and it is a solution that can be used beyond the United States.

## TAXPAYER RETURN FOR THE ENVIRONMENTAL TECHNOLOGY INITIATIVE PROJECTS

Senator KERREY. Taxpayers basically provided the capital. Can you provide me, not now but perhaps later, what kind of return the taxpayers got for their $104 million?

Ms. BROWNER. Certainly; if you just look at the Chicago Board of Trade, if you look at the ability to expand the recycling market, we will try and put a dollar amount on that, but it is huge. The fact that now a city collecting newspapers knows where they can sell their newspapers, provides untold benefits both in terms of diminishing the need for virgin materials, but also in terms of rewarding and allowing a community who made the capital investment to collect the newspapers and the recyclables, to actually get a return on that investment, and the list goes on.

[The information follows:]

### ETI PROJECTS/INVESTMENTS AND PARTNERSHIPS

Attached is a copy of EPA's brochure (EPA 230–F-96–004) which describes six of the 274 projects and partnerships that are being carried out with ETI support. None of these projects provides funding to private companies who profit at taxpayer expense—ETI is not corporate welfare. These projects illustrate how taxpayer support can "leverage" private capital to protect health and the environment while at the same time strengthening our economy.

For example, the ETI funding provided to the Chicago Board of Trade (CBOT) is key to developing more efficient markets and more uniform standards for recycling paper, glass and plastics. If you are trying to buy PET No. 2 plastics to make a new product—but you are trading with another community or company 1,000 miles away, you want to be assured that you are getting value for your money. ETI dollars assist CBOT, the New York State Office of Recycling Market Development, and others to expand upon the many local and regional markets that may be saturated with one commodity—e.g., newspaper, while other markets are short of another. Small businesses and commodity users benefit from being able to combine their purchases in a single trade, which can lower their cost to buy recycled goods. This project is an example of where government spending on a "market-based approach" is likely to produce more public benefit (i.e., communities that can meet their targets of recycling 40–60 percent of their wastes) than EPA would if we invested taxpayer dollars in regulating community recycling programs.

In the case of the furniture manufacturers, the industry is dominated by small businesses who do not have the resources to pursue technology innovations on their own that primarily improve public health protection. They are generally wary of trying new or different furniture coatings, because of the risks and costs involved. The industry is generally considered a fashion industry where consumer preferences and price significantly influence manufacturers' choice of coatings. ETI investments help to overcome their bias towards using "tried and true," yet highly toxic furniture coatings, by providing a third-party (Midwest Research Institute) evaluation of coatings that have more desirable environmental attributes and then demonstrating their applications. Once manufacturers have more reliable data and demonstrated success to work from—they have expressed a greater willingness to try more health-protective furniture coatings. This project will eventually allow the furniture manufacturing industry to protect public health by reducing furniture makers' exposures to toxics in their workplace and their surrounding communities. Consumers will benefit from furniture that does not emit volatile organics or hazardous air pollutants.

### AMERICAN TAXPAYERS' RETURN ON RESOURCES FOR ETI

ETI is making tangible accomplishments in the promotion of technologies that protect public health and the environment.

*ETI is helping to make the water Americans drink safer.*—One in nine U.S. residents nationwide drinks water that fails to meet federal or state drinking water standards and others face intermittent threats from dangerous and sometimes life-threatening contaminants. The Environmental Technology Initiative assists in efforts to build effective and affordable tools for addressing these threats.

—ETI is developing new membrane barriers that prevent dangerous contaminants such as cryptosporidium from entering Americans' drinking water, and other technologies that will disinfect the water as well as provide quicker confirmation of drinking water safety than has traditionally been available.

—ETI is slashing the time EPA takes to approve innovative new technologies that may prove capable of monitoring for hard-to-detect contaminants such as cryptosporidium, the deadly parasite that killed over a hundred Americans in Milwaukee, Wisconsin in 1993, and continues to pose a national threat.

—ETI is verifying the performance of new technologies that are suitable to the special cost and performance needs of small, drinking water treatment systems, which serve an estimated 25 million Americans. At present, 80 percent of these systems are violating the Safe Drinking Water Act and exposing Americans to dangerous contaminants like coliform, giardia and lead. Without the independent verifications being funded by ETI, small communities with limited budgets will confront difficulties in choosing the right tools to solve their drinking water problems, leaving citizens at risk.

—ETI is funding the development of alternatives to chlorination as a disinfecting agent, which would address substantial and growing concerns about the effects of chlorination by-products on the long-term health of Americans.

*ETI is helping to clean up the air Americans breathe, eliminating toxic air pollution that damages lungs and can cause cancer.*—ETI is helping to develop advanced substitutes for hazardous solvents, furniture coatings and other industrial chemicals—which will help to reduce significantly the emissions of volatile chemicals that lead to smog, damage the lung tissues of Americans and cause a wide range of respiratory ailments.

—ETI is developing and testing ways to cut down on the especially high proportion of automobile emissions that occur in the warm-up phase after ignition, providing an intelligent solution to a long-standing health threat.

—ETI is helping to reduce Americans' exposure to toxic chemicals such as mercury and dioxin from small combustion units located in heavily populated areas.

—ETI has worked with dry cleaners to find safer and more effective alternatives to the use of perchloroethylene, thereby reducing exposure to this hazardous air pollutant among workers and thousands of Americans who live near the nation's more than 34,000 dry cleaning facilities.

—ETI has funded efforts to reduce dangerous toxic emissions released by the metal finishing processes used by over 3,000 metal finishing facilities nationwide. One of these projects is reducing the use of chromium, which has long been known to be a cause of lung cancer in humans exposed to it occupationally. ETI also includes a project with chemical manufacturers to reduce a range of harmful chemical exposures that Americans face in their workplace.

—ETI is demonstrating a new technology that reduces emissions of nitrogen oxides, which cause acid rain and ozone and smog pollution. The project will reduce nitrogen oxide pollution in the Northeastern seaboard states by 1,000 tons per 4 year, reducing respiratory damage and other health effects among Americans in this heavily populated region.

*ETI is accelerating the cleanup of hazardous waste sites that are exposing Americans to dangerous chemicals.*—One in four Americans lives within four miles of a toxic waste site. ETI is reducing Americans' exposure to hazardous chemicals by speeding up the approval process for new analytical methods, such as immuno-assay technologies capable of quickly characterizing the nature of contamination at these sites and thereby advancing efforts to clean them up.

—ETI is piloting an automated treatment system based on innovative biological remediation technology that will clean up groundwater contamination at Superfund sites and protect Americans from the substantial health risks posed by contaminated drinking water sources.

## TEN WAYS THAT EPA'S ENVIRONMENTAL TECHNOLOGY INITIATIVE INVESTMENTS ARE MAKING A DIFFERENCE

*Communities and companies get top dollar for recycling paper, glass and plastics.*—With Environmental Technology Initiative (ETI) funding, the Chicago Board of Trade, New York State Commerce Department, the U.S. Environmental Protection Agency and the Washington State clean technology program have started the country's first commodities exchange for recycled paper, glass and plastics. Commodities traders, companies and communities across the country will now be able to get top dollar for their recyclables. Recycling paper, glass and plastics reduces the demand for waste disposal facilities, such as landfills and incinerators. This market-based approach to environmental protection also promotes sustainable economic development by reusing commodities that still have economic value.

*Performance verifications make technologies "approvable" by Federal/State regulators.*—Many technology companies complain that they can't get customers to buy or use their new technologies based on their own, self-generated data. ETI-funded third party verification programs provide technology users with the information that they need to make informed buying decisions and provide permitting officials with the data necessary to approve the use of new technologies. Under the ETI funded, Environmental Technology Verification Program, EPA is partnering with public and private organizations to verify the performance of many types of new technologies. Small drinking water systems are evaluated by NSF International, a private sector testing and standards firm. The California Environmental Protection Agency is expanding the country's first state-run, technology verification program from a focus on waste clean-up technologies to pollution prevention and waste treatment technologies for the electronics, metal finishing, auto assembly and printing industries. Contaminated site characterization technologies are tested by Sandia National Labs and indoor air products by the University of Illinois. The Environmental Technology Verification program is also piloting an independent approach which will proceed without EPA involvement to assess the effectiveness of a solely, private-sector led, technology verification program.

*Making cleaner cars.*—With ETI funding, the University of Tennessee's Clean Technology Center is working with Saturn Corporation and other automakers to develop new analytical tools—computed models and software that will help the company identify pollution prevention opportunities, energy and cost savings throughout their automobile manufacturing processes.

*Community water quality cost savings.*—With ETI funding, the City of Phoenix, Arizona and the Village of Minoa, New York are researching the use of constructed wetlands to filter their wastewater and meet state water quality standards. ETI funding will support Phoenix's efforts to prepare and process the first Clean Water Act permit for constructed wetlands. Phoenix Deputy City Manager George Britton claims this project will eventually save city ratepayers $300–500 million, improve water quality and enhance wildlife habitat in the Salt River watershed. Twenty other communities are also interested in using constructed wetlands to solve their water quality problems.

*Small communities benefit from drinking water system verification.*—With ETI funding, EPA and NSF International are verifying the cost and performance of packaged drinking water systems that serve small communities. These package systems offer small communities big cost savings while they protect public health and meet drinking water quality' standards.

*Environmental technology exports create jobs here at home.*—With ETI funding, EPA-New England, the Environmental Business Council and NALCO Fuel Tech and their partners were able to market $50 million in air quality management technologies and services to the Polish government and several Central European industries. Environmental technology export sales will generate jobs in the U.S. as NALCO Fuel Tech and their partners serve export market needs.

*Pollution prevention/small business.*—With ETI funding, the Design for the Environment Screen Printing Project has developed a variety of innovative tools and information products for the screen printing industry. One video, "Saving Money and Reducing Waste" shows how thousands of screen printers nationwide can prevent pollution and minimize waste by improving inventory control, reducing toxic chemical use, changing work practices and training their employees. This ETI project is a cooperative effort involving EPA, the Screenprinting and Graphic Imaging Association, and the New Jersey Small Business Development Center.

*Non-profits, colleges and universities are important ETI stakeholders.*—With ETI funding, Midwest Research Institute in Missouri is helping to develop advanced substitutes for hazardous solvents, furniture coatings and other industrial chemicals—which will help to reduce emissions of volatile chemicals that lead to smog and can cause a wide range of respiratory ailments.

*Public/private partnerships promote technology innovation.*—With ETI funding, Tellus Institute (Boston), the University of Massachusetts Toxics Use Reduction Institute, the Neighborhood Cleaners' Association, GREENPEACE, the Amalgamated Clothing and Textile Workers' Union, the Center for Neighborhood Technology (Chicago), and Dow Chemical Company are working together to find safer and more effective alternatives to using perchloroethylene. This effort will reduce exposures to this hazardous air pollutant among workers and thousands of Americans who live near the nations more than 34,000 dry cleaning facilities.

*Common sense approaches.*—With ETI funding, EPA, DOE and a consortia of metal finishers are working together to reduce toxic emissions in more than 3,000 metal finishing facilities nationwide. One of these projects reduces chromium uses, which have long been known to cause lung cancer in humans exposed to it occupationally. ETI also includes a project with chemical manufacturers to reduce a range of harmful chemical exposures that Americans face in their workplace.

Senator KERREY. I think it would be helpful to put a numerical value on it, because we are basically saying that the American taxpayers are becoming partners in these ventures, and though they do not own stock or anything like that, I think it is important to be able to demonstrate some economic benefit that occurs.

Does EPA have a value added that the Commerce Department does not in this arena?

Ms. BROWNER. Absolutely. We do work in partnership with the Department of Commerce, but again, and probably the best example is the verification work that we do. There are many other things that we do that we think are equally important, but verification, I think, is the easiest one to understand. EPA saying that a new technology actually addresses an environmental problem is extremely important to a company hoping to market their product outside of the United States. I have met with many, many small companies, upstart companies, inventors who say that it is absolutely essential to their financial success, to have an EPA verification. It is not a Department of Commerce verification, it is an EPA verification.

Senator KERREY. When you say upstart, you mean startup, not upstart, do you not?

Ms. BROWNER. I am sorry, I mean startup.

Mr. HANSEN. Senator Kerrey, I think a very good concrete example of that is not an upstart or a startup company but a large company, such as CH2M. Bill Blasser, one of their key people in Brazil, is looking at marketing a specific wastewater treatment technology, the question that comes to mind is whether or not being certified or permitted by EPA, and what have we said about it. If the answer is, EPA has, in fact, approved that technology or permitted that technology in all detail, it is willing to be accepted at face value.

Without that verification, the level of engineering work, review, and other things that are done for technologies from other countries, if, in fact, we have not certified it, is much higher. It is that ability to be able to pull that together is something only Government and only EPA can do.

### ENVIRONMENTAL TECHNOLOGIES VERIFICATION

Senator BOND. Senator, if I may interrupt, I think you have made a very, very important point, and that is that EPA's verification, the good housekeeping seal of environmental approach, is the function that EPA can perform. Senator Kerrey has raised the question that I have as to why we are funding a whole lot of activities that should be actually profitable or part of the private market's responsibility to fund these activities. That is where I challenge the environmental technologies and the green lights and all of those programs, where I think, and I think this is your point, the EPA can provide the valuable services to say yes, this works, this meets the standards. That is the verification function that is important.

Senator KERREY. That is exactly right. I see value added for EPA in the interagency process, but I do think that it is very, very important if we are going to take $100 million of taxpayer money to put into private ventures, basically that is what we are doing, and both Senator Bond and I have been Governors and been in situations where we face people that say what we need is a new agency that will invest in private sector technology, and very often what we have essentially is a business person that cannot get the private capital on their own and they want the taxpayer to put the money into the deal. And it is very difficult to set up an operation where the Government is risking taxpayer money unless we make sure just in a very, very methodical fashion we evaluate what kind of return is gotten. Otherwise we find ourselves with egg on our face saying we just took taxpayer money and put it into a deal that we should not have put it into.

Ms. BROWNER. We are more than happy to provide that. I think it is important to understand that within the environmental technology initiative there are a number of things going on. Verification is one. Working in partnership, and not necessarily giving money to a small company, but working in partnership to find new solutions, to push the envelope in terms of technology, is another. We are more than happy to demonstrate to you what we think the return has been in terms of public health and environmental protections in terms of cost savings.

If we can find a cheaper way of solving a problem with a small amount of Government resources that has tremendous benefits both for the private sector but also for the public at large in terms of a better environment has benefits in terms of cleaner air or cleaner water.

If I might, Mr. Chairman, just very briefly. You mentioned some of our other partnership programs, for example, the Green Lights Program. In each instance, we can show you that by making an investment not only are we saving perhaps a company business, but we are doing more to protect the environment. If you think about it, we have a lot of tools that Congress has granted us. We can set standards, we can enforce the standards, we can write permits. We can also work in a way with business, in partnership with business, to find creative solutions outside of the regulatory program that give us additional environmental benefits. I think we would want to be very careful about rejecting these partnership activities.

Senator KERREY. I do not disagree with that. To use Chicago as an example, I could be sitting as a Chicago taxpayer, and one day, let us say the 14th of April, somebody walks into my office and says I would like to have you invest $5,000 in my environmental technology business, and I take a look at the prospectus and say it looks like a too-risky deal. It does not look to me like it is a very good deal. I will not give you $5,000. On the 15th of April the Federal Government takes $5,000 of my money and puts it in the very deal that I rejected the day before.

All I am saying is—I mean, I support the program. I think what we are doing has collateral benefits. But I think we really have to put on the green eyeshades when it comes to looking at return and make sure that we are not subsidizing, A, business that could get the money from the private sector anyway, or subsidizing businesses that do not deserve to be subsidized.

Ms. BROWNER. You are right.

Senator KERREY. I just think the more we can be very, very tough and say look, we are not going to—we know that people are working hard for their taxes out here. Unless we can prove up a benefit we are not going to put money in the deal.

Ms. BROWNER. Oh, I absolutely agree. I think we all would agree that if something could not happen or would not happen without the tax dollars, if it is not a viable project then we should not be funding it. There are lots of things that are important to have happen. There are a lot of things that have real benefit and with a little bit of seed money we can achieve those benefits.

In Green Lights, we can show you for every dollar spent what the benefits are, and they are quite dramatic, in my opinion. Now, we could all believe that in a perfect world that every company out there would make decisions to reduce their energy use without us being there to help them. The fact of the matter is they do not and they have not. Unfortunately, since we had the oil crisis of the 1970's, businesses have generally stopped thinking about energy efficiency.

What Green Lights does is demonstrate to a business something that results in cash savings for the business and environmental benefits for the public. These companies are not doing it without us. As much as we would like to think they would be, they are not. That is just the reality, and so that is what that resource goes to, and it benefits everyone.

### INTERNATIONAL ACTIVITIES

Senator KERREY. I am going to not take the bait. I would love to actually respond to that and get into a discussion with you about what businesses are and are not doing out there, but let me get on to another question involving the Office of International Activity. There is some street talk that EPA is not doing as much as we should be doing internationally, and I just wanted to give you a chance to talk to me a bit about what you are doing in the international arena.

Ms. BROWNER. I think if you look at the record of this administration on international issues, everything from the work we have done on the Montreal protocol to the international debates on climate change, persistent toxics, the international phaseout of lead, and much of the administration's work on international environmental and public health issues is done with the services of EPA.

We are very proud of the progress that we have made in this administration in terms of reestablishing the United States leadership on international environmental issues.

### RADON IN DRINKING WATER

Senator KERREY. Mr. Chairman, I have two questions about issues related to Nebraska, and I would like to get into them and move through them quickly so I do not overstay the chairman's welcome. First, radon and drinking water. I do not know if you are aware that I have been leading on that and irritating some folks in your Agency on this issue. You have been very good in working with me on it and promulgating the rule that would have had a very costly impact on small communities.

Ninety percent of Nebraska cities have 2,500 people or less. And in your own testimony you say EPA is trying to, "invest its resources in the highest risk environmental problems". And I know you know that the biggest threat from radon is from inhalation, not from water, and the most cost-effective way to reduce the risk is dealing with inhalation as opposed to dealing with water.

My concern is that yesterday my understanding is the House Commerce Subcommittee on Health and Environment marked up the safe drinking water amendments, and included in there was some language that my small communities have expressed some concern about that allows EPA to promulgate a regulation of the cost benefit analysis required in the bill and taking the health effects of exposure to radon from other sources into consideration. At first glance, it appears to make sense. But, also, the dangling participle there that has them saying that they are going to look at exposure from other sources, is your sense that the EPA would interpret that that we could be flexible and look at air, and put our money where we are going to get the most benefit? Is that how you see that?

Ms. BROWNER. I think the intention of language, and Bob Perciasepe, who has been intimately involved in the discussion on the House side can speak to this, is to give us the ability to look broadly at the radon issue in making a drinking water determination. As you understand, I think, we do not have regulatory authority on the air side of radon per se in terms of setting standards. The authority has been through the Safe Drinking Water Act, and I think the effort there was to give us some flexibility as we look at the drinking water ramifications in terms of radon.

Senator KERREY. You do not see that as a green light, then, to promulgate 200 picocurie per liter?

Ms. BROWNER. I am going to ask Bob Perciasepe to speak to that. This was the source of a lot of discussion on the House side.

Mr. PERCIASEPE. Mr. Chairman, Senator Kerrey, my name is Bob Perciasepe. I am the Assistant Administrator for the Office of Water at EPA. We obviously have been working under a hiatus on radon as we go through each year, and we have all been hoping that through the negotiations on the Safe Drinking Water Act in the Senate and House that we could get to a point where we could decide which way we are going to go on this. In the Senate bill that was enacted, and I think it passed 99 to nothing in this Congress last year, a specific number was picked. I believe it was 3,000 picocuries per liter, and it allowed the Agency to go less than that if we could prove, with scientific studies, et cetera, further risk reductions.

The House bill took a slightly different approach. They said we could apply new cost-benefit analysis flexibility taking into account a more holistic exposure to an individual as opposed to just the water exposure. Then we could set a standard based on that and what is appropriate to assign in terms of risk reduction to the drinking of water.

Obviously, it does not pick a number such as the House bill. However, it provides all kinds of flexibility that we have discussed, that have been discussed in numerous hearings on risk and cost benefit. I am sure that some of the discomfort is that it does not actually pick a number, but it does provide us, we view, with the flexibility to make a good, sound, scientific decision taking into account that full range of exposure.

## PROJECT XL

Senator KERREY. I appreciate that.

One last question, and actually I will ask it without any expectation I will get a detailed answer. We can discuss this later. I am looking at your project XL—the community—the XL Program, and the fact sheet on the Baltimore Development Corp. efforts, and it is very much along the lines of many small communities in Nebraska that have been attempting to do the same thing, one in Nemaha where normal costs for implementing regulation be $500,000, which they simply cannot afford. They reduced it to $50,000, which was a much more acceptable cost, and it is a process clearly that works, and I hope that you will take a look at this particular effort especially.

And second, another important one, I know for Senator Bond as well, is the research that EPA is doing in wetlands mitigation. This has been one of the thorniest regulatory issues that I have ever been involved with, and I hope that EPA is doing the research that we will need to do remediation and restoration.

Ms. BROWNER. On the first question, let me offer, if it is agreeable with you, to work with that community to see if they might not like to apply for project XL. It is real simple, what people are being asked to do. It is not just the business community, it is also cities and States. They are to demonstrate to us a willingness to go further than what the current requirements would dictate, and we will give you the flexibility to do more. We really tried to reach out to communities to have them come into the program, and so if there is an interested community we would love to sit down with them. We can help them write the application, we can work with them to provide them the flexibility.

So please, we would be more than happy to do that. It is a very exciting program, and I think it's beginning to reap tremendous environmental benefits, in addition to cost savings both for communities and States.

On the second issue——

## WETLANDS RESTORATION AND MITIGATION

Senator KERREY. The wetlands, the research for restoration and mitigation.

Ms. BROWNER. Yes; I could not agree more, and we are involved in looking at what are the best means for restoring previously altered wetlands, and also in terms of managing the mitigation side of the permitting program. We have been involved with a number of States in setting up mitigation banks. We think there are real opportunities. The goal has been, and I have said this for 6 years now, that we have got to get beyond this sort of postage stamp approach to wetland mitigation and move people into working on systems. We are having some real success and we would be more than happy to share those with you.

## INSPECTOR GENERAL'S REPORT ON THE GREEN LIGHTS PROGRAM

Senator KERREY. Thank you, Mr. Chairman.

Senator BOND. Thank you very much, Senator Kerrey, for very good questions. I appreciate the discussion that has resulted.

Madam Administrator, you have talked about the great successes of the Green Lights Program. Obviously you feel it is a high priority since it is slated for a 75-percent increase in the budget request, but frankly we are very much concerned about the program. According to the recent inspector general's report he identified considerable waste and abuse on the program, including sending a contractor to Hawaii to help Green Light partners who needed no help, using contractors for simple tasks getting information from EPA regions to the EPA headquarters, generating significant amounts of unnecessary paperwork, and really one of the things that this report did was to question how EPA was measuring the success of the program. It seems that EPA's measurement is based in large part on the number of entities signed up, not those that were active participants, and, in fact, according to the inspector general, corporations which were terminated by EPA for not carrying out their end of the agreement were still listed as Green Light partners.

Maybe rather than taking up time here, I assume that you have response to the inspector general's report. We would be very interested to see it, because it does raise some very significant questions, at least in my mind, about the need to make such a significant increase in the program.

Ms. BROWNER. We would be more than happy to share the response with you. We will provide a written response to the inspector general's report on June 30 of this year. This is the process that goes on when you have a report of this nature. But if it would be helpful to you, we could certainly highlight for you now what we intend to include in that response.

[The information follows:]

## RESPONSE TO DRAFT REPORT OF AUDIT ON AGENCY'S MANAGEMENT AND OVERSIGHT OF A MAJOR EPA CONTRACTOR'S CONTRACTS AUDIT REPORT NUMBER E1SKF5–03–0070

### COMMENTS ON CHAPTER 2 AND 3

1. STATEMENT: PRIOR AUDIT COVERAGE (p.6) In 1995 the OIG completed a limited review of the Green Lights program. The limited review addressed whether the Green Lights program had been successful in its voluntary approach to pollution prevention.

RESPONSE: The draft OIG statement omits important information that provides essential history for the reader. The following additional information should be included in the current report:

The OIG completed a survey (No. E1KAB4-11-0023) of the Green Lights program in November 1994. OIG found "current program operations and internal controls to be adequate, and changes planned or taken to overcome program barriers to have been adequate, and if implemented, should help the Green Lights program to meet current and future program expectations." The OIG also found that the program had implemented "a fairly effective marketing strategy for promoting the program." The OIG stated, "We believe many of the positive accomplishments of the Green Lights program to date can probably be attributed to the marketing program. Indications are that sufficient evaluation of participant feedback allowed GCD officials to make the necessary changes to enable gradual progression of the program . . . We believe GCD officials should continue their promotion of the environmental and economic advantages of participating in the Green Lights program. Continued efforts in this area are necessary to increase participation and meet targeted reductions in greenhouse gas emissions."

2. STATEMENT: CHAPTER 2: THE SUCCESS OF GREEN LIGHTS WAS OVERSTATED "Green Lights is a good idea, but is more costly than necessary. During fiscal years 1994 and 1995, EPA spent $12.2 million on contracts, primarily with [the contractor] to market and implement the program." ( p. ii, p. 6)

RESPONSE: The IG did not specify the criteria that it applied in reaching its proposed conclusion that the Green Lights program is more costly than necessary. Other than to suggest reducing reporting by the contractor to the program regarding program and contractor progress, specific areas which the IG deemed more costly than necessary were not identified. Since this step has already been taken, and the cost savings were very small, it is not clear what other costs, if any, that the IG deemed unnecessary. EPA undertakes only necessary activities in designing, implementing and evaluating the Green Lights program. EPA works to assure that the activities and the related costs incurred during this work are reasonable, prudent, and tightly managed. (See response to statement # 21, below, for further discussion.)

Green Lights is an extremely cost effective and highly leveraged program. In all, EPA spent less than 2 cents per square foot of space committed to the program to support current and potential program participants. Every dollar invested by Green Lights results in about $20 of energy cost savings by partners. Partners achieve these savings by investing in lighting upgrades. We estimate that at program maturity in 2000, every dollar invested by EPA in Green Lights will result in $49 of private investment. By 2000, private investments of nearly $2 billion per year in Green Lights will support nearly 52,000 additional jobs in the United States.

EPA has worked continuously to minimize Green Lights program costs and to reduce the cost per square foot to implement the program, while improving program effectiveness. We have made progress in this area. The growing number of square feet in the program means that in spite of unit cost reductions, total costs may not fall as quickly. Fiscal years 1994 and 1995 were a time of great evolution for the Green Lights program. At the start of this period, the program had 1138 participants who had committed 3.8 billion square feet of space to be upgraded. At the conclusion of this period, there were 842 additional participants (a total of 1980 participants) who had committed an additional 1.2 billion square feet to be upgraded.

For example, during this time, EPA placed a great emphasis on assuring that program participants successfully completed their commitments. EPA provided unbiased technical information and education to partners, and answered thousands of inquiries per month from the participants. potential partners and the general public. EPA has independently made significant changes in the program in order to streamline and reduce program costs, to improve service to the public. and to increase the effectiveness of our partners' pollution prevention efforts. For example, EPA reduced the number of program progress reports that were provided by the contractor reports from 12 to 4 while maintaining oversight of program performance. The workshops sponsored by EPA were attended by increasing numbers of program participants, resulting in savings of approximately $65 per workshop participant.

We are not certain which work assignments the Inspector General includes in its estimates of $12.2 million spent on Green Lights. It is possible that this amount includes work in support of the advances beyond Green Lights which we undertook at the request of program participants. These advances culminated in the Energy Star Buildings Program.

3. STATEMENT: "We found that this success was measured more on the number of participants who signed up than on the extent than they actually implemented the program."(p.6)

RESPONSE: This assertion is not true. Conclusive documentation is available from as far back as 1992 (using 1991 data) that directly and conclusively refutes the IG's statement. Green Lights has always measured its success on both the number of participants and how well those participants have done to implement the program.

Green Lights Annual Reports for 1992, 1993, and 1994 each show that the program focuses on the number of square feet **upgraded and the specific energy savings from individual upgrades calculated from the annual reports they submit to us**. These savings were evaluated and found to be accurate by the Inspector General in a November 1994 survey. The November 1994 OIG report states, "To obtain further assurance of the reliability of reported program accomplishments, we confirmed reported pollution prevention reduction totals listed in the GCD's third annual report. The report documents annual pollution reductions realized in carbon dioxide, sulfur oxide and nitrogen oxide, computed from completed upgrade projects as of December 31, 1993. We confirmed reported accomplishments by matching them against a computer printout of aggregate emissions reductions for each company whose upgrade contributed to the totals in each of the three reduction categories."

To date, **20% of enrolled space, one billion square feet, has been upgraded** -- *right on schedule.*

4. STATEMENT: "[W]e recommend that EPA dismiss entities that have evidently signed up for public relations purposes and instead focus its efforts and contract dollars on entities that are serious about the program."

RESPONSE: EPA has a specific policy in place to dismiss entities that are not serious about their participation in the Green Lights program. Regardless of size, Green Lights monitors the performance and upgrades completed by all participants. If a participant has not done its lighting upgrades or has not reported its progress annually, EPA sends up to three reminder letters. If no response is forthcoming and it becomes clear that the organization no longer intends to uphold their end of the commitment, then either they decide to leave the program on their own or we ask them to leave the Green Lights program.

5. STATEMENT: NON PARTICIPATORY PARTICIPANTS (pp. 8,10) "Many of the entities cited as 'participants' including [the contractor] and its major subcontractor had either never participated in the program or had made only minor progress."

RESPONSE: Many Green Lights participants complete their upgrades ahead of schedule (i.e.. before five years). As of March 1996, 22% of active Green Lights participants completed their upgrades. 21% of this group completed their upgrades ahead of schedule (in less than five years). The majority of participants are meeting their upgrade schedules. Only 411 participants upgraded less than 10% of their space after just two years in the program.

Under the Memorandum of Understanding that defines partner and EPA responsibilities, Green Lights participants are given five years to complete upgrades of their eligible space. The upgrade process includes several important steps: designation of a Green Lights Implementation Director (GLID), survey of space and determination of lighting needs, procurement of lighting components, installation of lighting upgrades and establishment of lighting maintenance procedures to help "lock-in" the savings. EPA asks participants to report once per year on their progress in this process. Because participants are only obligated to document their progress annually, there is often a one year lag between actual program progress and our understanding of that progress. We encourage the participants to make continuous efforts to meet their commitments. *Ultimately, however, partners are allowed to complete all of the installation of their upgrades during the last year of their commitment.*

There are many organizations who have effectively used the first one or two years of participation in the program as the time to conduct their surveys, assess their options, organize themselves and gain the capital to finance their upgrades. The upgrades themselves are completed in the last 2 or 3 years of the program.

The contractor has offices in Oakland, CA, Universal City, CA, Washington, D.C., Fairfax, VA and Pittsburgh, PA. The contractor is moving out of their offices in Oakland and Pittsburgh. Therefore, the contractor is not required to upgrade this space. The Universal City office has been completely upgraded. The downtown offices have been upgraded, and progress has been made in the Fairfax office: it has been surveyed, upgrade progress has begun, and two floors have been completed as of March 1996. The major subcontractor occupied only leased space for which it had a short term lease (less than five years). Under the provisions of the Green Lights program, they are not required to upgrade any of this space. In 1994, the subcontractor was sold to another company. That company joined Green Lights and has until 1999 to complete its upgrades.

6. STATEMENT: "It appeared that EPA placed more emphasis on signing up entities, than it did in having the entities switch over to more efficient lighting." (p. 8)

RESPONSE: The draft report provides no further information or support for this statement, making a specific response difficult. EPA recognizes that the Green Lights program, like any new program, undergoes an evolution from conception through startup and into full scale implementation.

The program has been designed to address each barrier to the implementation of energy efficient lighting in a specific manner. Initially, we identified the lack of senior corporate commitment as a key barrier to the implementation of highly efficient lighting. Therefore, early efforts in the program primarily focused on developing the program, setting up the criteria for participation and recruiting participants. Our initial hypothesis proved true, but addressing commitment proved to be insufficient to assure the full energy savings and pollution prevention.

In 1993, we identified additional key barriers, including lack of internal organization, funding and planning to follow through with the commitments. Therefore, in 1993 we began to increase our emphasis on implementation activities and have continuously strengthened this emphasis since then. Special efforts to work with partners to achieve more timely and more effective lighting upgrades include: conducting specialized mobilization meetings, establishing Partner User Groups, and the development of more refined computer tools.

As a result of these efforts, one billion square feet ( 20% of all enrolled space) have completed upgrades -- right on schedule.

7. STATEMENT: "All too often though, the message received on the annual letters was mixed. For instance, the first page of the letter would congratulate the entity on its Green Lights anniversary, while the next page would notify the entity that it was making 'inadequate progress'." (p. 8)

RESPONSE: The concern about the potentially mixed message given by a congratulatory anniversary letter that was accompanied by a snapshot indicating inadequate progress is valid. However, *we resolved that problem nearly one year ago* by eliminating all evaluative wording from the participant snapshots. Snapshots now summarize the total progress made in quantitative terms only and are still included with the anniversary letters. The anniversary letters are also written in a more encouraging tone that acknowledges progress made and encourages work to continue.

8. STATEMENT: "In one instance, EPA actually informed itself that it could not evaluate its own progress because it had failed to submit reports to itself."(p.9)

RESPONSE: As with other organizations, the responsible organization and individuals within EPA that are carrying out and implementing the energy efficient lighting upgrades under the Green Lights program are different than those that committed the Agency to participate in the program and from those that run the national program. The upgrades are being conducted through the EPA's Facilities Management and Services Division. The letter to the GLID (in the Facilities Management and Services Division) was the one sent to all program participants, including ourselves, that fail to submit information on upgrades that have been completed. EPA is not treated any differently than any other organization that joins the program. We will assure that in the future, memos are sent within EPA rather than letters, in conformance with Agency policy.

9. STATEMENT: EPA EMPHASIZED PROMINENCE "EPA placed great significance on the prominence of its participants, but without always revealing their lack of actual participation within the program . . . We believe that it was misleading to promote such enlistments, because some of these prominent participants had yet to actually participate three and four years after having signed up."(p.9)

RESPONSE: The examples of so-called "non-participants' listed on page 10 of the draft report are all companies from the first group or class of Green Lights partners. At the time this group of partners joined the program, some of the most effective activities and tools to assure prompt initiation and timely completion of lighting upgrades were not in place.

The program has been designed to address each barrier to the implementation of energy efficient lighting in a specific manner. Initially, we identified the lack of senior corporate commitment as a key barrier to the implementation of highly efficient lighting. Therefore, early efforts in the program primarily focused on developing the program, setting up the criteria for participation and recruiting participants. Our initial hypothesis proved true, but addressing commitment proved to be insufficient to assure the full energy savings and pollution prevention.

In 1993, we identified additional key barriers: lack of unbiased information to assist partners with choosing appropriate lighting upgrades and lack of internal organization, funding and planning to follow through with the commitments. Therefore, in 1993 we began to increase our emphasis on implementation activities and have continuously strengthened this emphasis since then. Special efforts to work with partners to achieve more timely and more effective lighting upgrades include: conducting specialized mobilization meetings, establishing Partner User Groups, and the development of more refined computer tools.

Our experience with hundreds of participants has shown that the increased emphasis on implementation is especially effective in cases where we work with each partner early in the partner's association with the program. The longer the lag between the time that the partner joins the program and the time that implementation efforts are available, the more difficult it is to achieve upgrades within the allotted period.

Therefore, members of this early group of participants, who have not completed their upgrades after five years in the program are either being asked to leave (if we believe they are not committed to completing these upgrades) or are being allowed to take advantage of the current implementation support and to extend their participation by one to three years in order to achieve success within the program.

10. STATEMENT: " For example, EPA congratulated a company on its third anniversary, noting that its surveying of 4,300 square feet and upgrading of 3870 square feet was equivalent to the removal of one car from U.S. highways or planting one acre of trees in a U.S. forest. On the same day, however, EPA congratulated the Governor of a State which after three years had done nothing in the program. Yet both entities were looked upon as bonafide 'participants.' " (p. 9)

RESPONSE: Participation in the Green Lights program is measured by several steps: joining the program, completing all profitable upgrades, and allowing for the time between these to conduct the surveys and carry out the upgrades. Therefore, participants in the program include those who have committed to do the upgrades, those who are in the process of completing the upgrades and those who have finished. EPA uses progress in all of these stages as measures of program success. In our partnership programs, including Green Lights, we work in a cooperative, rather than a punitive or enforcement based spirit. We work to tailor our communications with partners to achieve further progress in the most constructive manner possible. In the case of the State mentioned in the report, the experience of the Green Lights program has been that public entities take longer to plan, organize and secure funding to conduct upgrades.

In order to help overcome the barrier of lack of financing for public organizations, the Green Lights program is currently working on a special project to help create tools to overcome the unique problems of large public partners, such as states and large cities and counties. The state cited by the IG, although moving slower than a private business , was still within the allowed time frame for program implementation. The letter to the governor provided the highest level executive of the state with a polite reminder of the state's status.

Not all participants have made equal progress in this program, but all are our partners. The example given in the position paper suggests that an organization should not be considered a bonafide participant until some lighting upgrades have been completed. On the contrary, our experience suggests that the process of planning, specifying, scheduling, and financing lighting upgrades is usually more challenging and time-consuming than the actual installation. It is often necessary for Green Lights partners to invest a significant amount of time to prepare for lighting upgrades in order to ensure the quality and appropriateness of the lighting choices implemented.

11. STATEMENT: "EPA especially noted the enrollment of Fortune 500 companies and inferred their active participation in various reports issued to extol the success of the program. In reality, however, some of these participants were possibly candidates for termination because of their lack of participation." (p. 10)

RESPONSE: EPA provides positive reinforcement for progress in all stages of the program. Enrollment is an important stage, because it is the first, necessary step on the road to high quality upgrades. A special effort is made to highlight the enrollment of large, Fortune 500 companies that have joined Green Lights, because these firms are often looked to as industry leaders by other prospective participants.

Other, equally important steps include completion of surveys, installation of upgrades, completion of commitments and public service by successful partners to help educate other program participants and potential partners. Annual Green Lights Awards publicly celebrate achievements in each of these categories.

Green Lights monitors the performance and upgrades completed by all participants. If a participant has not done its lighting upgrades or has not reported its progress annually, EPA sends up to three reminder letters. If no response is forthcoming and it becomes clear that the organization no longer intends to uphold their end of the commitment, then either they decide to leave the program on their own or we ask them to leave the Green Lights program.

12. STATEMENT: [THE CONTRACTOR] AS A GREEN LIGHTS PARTNER(p. 10) "Albeit, the answer is somewhat ambiguous [whether or not the contractor had to upgrade its leased space]. Either the contractor did not have to upgrade its offices leased for the short term, or at a minimum it was obligated to upgrade at least 25 percent of the square footage." (p. 12)

RESPONSE: The MOU is clear regarding how leased space is treated under the Green Lights program. Attached is the language from the Green Lights MOU. If an organization has leased space on a short term basis (less than five years) it does not have to upgrade that space. However, if more than 75% of the square feet of that organization is leased space (as is the case with the contractor), than the organization is obligated to upgrade 50% of that space, regardless of the length of the lease. Long term leases are considered upgradeable square feet. The fact sheet was incorrect and revisions will be complete by March 20,1996.

The contractor has offices in Oakland, CA, Universal City, CA, Washington, D.C., Fairfax, VA and Pittsburgh, PA. The contractor is moving out of their offices in Oakland and Pittsburgh. Therefore, the contractor is not required to upgrade this space. The Universal City office has been completely upgraded. The downtown offices have been upgraded, and progress has been made in the Fairfax office: it has been surveyed, upgrade progress has begun, and two floors have been completed as of March 1996.

13. STATEMENT: "We believe [the contractor] should have more fully participated in the program especially in light of the fact that (a)other participants that lease space have performed upgrades; (b) [the contractor] is and has been the Agency's major focal point for the other participants, i.e. if they have a question they go the [the contractor] for the answer and c) in its dealings with other participants, [the contractor] has expected those that lease--even on a short term--should nevertheless upgrade. "(p.12)

RESPONSE: EPA and the contractor have two separate legal, relationships within the context of the Green Lights program. On the one hand, the contractor is paid by EPA to support the marketing and implementation efforts of the Green Lights program. As such, EPA carefully monitors progress, gives clear guidance and directs all of the contractor's activities. In a separate legal agreement, the contractor is a Green Lights participant. As such, the contractor is treated in the same way EPA treats any other Green Lights participant. We do not give them special treatment, nor do we require any from them as a Green Lights partner that we do not require from any other organization.

We agree that it is important for the contractor to successfully complete its commitment to the Green Lights program. The current status of all contractor space that is eligible to be upgraded is: The Universal City office has been completely upgraded. The downtown offices have been completely upgraded. Progress has been made in the Fairfax office: it has been surveyed, upgrade progress has begun, and two floors have been completed as of March 1996.

14. STATEMENT: OVERZEALOUS TACTICS BY [THE CONTRACTOR] (p.12) "On occasion, [the contractor] has been rather insensitive in its dealings with other participants, or would-be participants. For example, [a contractor] deliverable to EPA, dated September 29, 1994, reported that on a March 16,1994 conference call between [the contractor] and another Green Lights Partner. According to the [contractor] representative, the phone conversation with the Partner's Green Lights Implementation Director [GLID] was not encouraging because the GLID 'is not supportive or receptive to any suggestions or support...' As a result of the conversation, [the contractor] concluded that the GLID was a 'barrier' because he lacks commitment.' [The Contractor] recommended that EPA contact the Major Executive Officer of the Green Lights Partner - and have the GLID replaced.. It should be pointed out that this was not the only instance where [the contractor] was critical of a GLID and lobbied for his replacement. " (page 13)

RESPONSE: Throughout the entire lifetime of customer support actions (dating back at least to 1993), EPA has had a specific list of barriers that it has instructed the contractor to use when identifying particular problems that a partner encounters while implementing Green Lights. (See attachment "Green Lights Management Report, Table 4: Implementation Barriers Analysis Report.) This table clearly shows what EPA instructs the contractor to look for and explicitly identify to the Agency specific barriers to partner progress, including barriers related to the GLID. This list of barriers shows exactly four particular GLID barriers that the contractor is and has been instructed to identify if they occur: GLID (1) lacks commitment, (2) lacks priority, (3) lacks authority or (4) ineffective GLID. Other types of observations are not requested from the contractor.

The contractor is sensitive and courteous in all communications it has directly with program participants. In keeping with the checklist described above, the contractor reports to EPA if the GLID is a barrier to success. This communication happens through internal reports that are held in confidence. These reports are often frank in explaining the *context* of each particular situation. The reports clearly identify barriers, potential problems and areas for careful attention. It is appropriate for the contractor to identify to EPA steps which may be effective in overcoming barriers that the partner faces. Meetings with senior executives of the partners are among the appropriate steps that the contractor may identify to EPA. EPA makes the final determination regarding whether or not to follow up on the contractor's recommendations.

Green Lights requires an organization-wide commitment. MOUs are often signed at the CEO or vice-presidential level in an organization. Occasionally, the person put in charge of actually implementing the program, the Green Lights Implementation Director (GLID), does not want to do the upgrades. EPA instructs the contractor to identify cases in which the GLID lacks a commitment or has animosity towards participation in the program in a way that creates a barrier to the mission of the partner. Occasionally in the past, the contractor has recommended to EPA that changing the GLID may allow the organization to meet its corporate commitment. EPA determines whether or not to follow-up on the contractor's recommendation. EPA has found that partners who assign GLID responsibilities to enthusiastic, empowered staff are able to succeed in the Green Lights program in a timely manner.

The case cited by the IG prompted swift, decisive follow-up by EPA. Within four days of receiving this information from the contractor, the WAM and the EPA manager in charge of the Green Lights program met with senior contractor personnel to discuss this issue. At this meeting, EPA made an explicit decision to not recommend potential GLID replacement to Green Lights partners. EPA determined that replacement of the GLID did not represent an acceptable or a practical option. Because EPA immediately established a firm policy rejecting any role in any partner's choice of an individual to become or maintain a position of GLID, this possibility has never been mentioned to any partner or representative the partner.

15. STATEMENT: "[The Contractor] could also be overly aggressive in dealing with would-be participants and sometimes would not take no for an answer. ... For example, [a contractor] deliverable to EPA dated September 6, 1994, reported on a 1992 conversation between [the contractor] and entity that it sought to enlist into Green Lights. A representative of the entity explained that he did not wish to sign up because: ' I do not see any benefit to this program, the EPA are a bunch of (expletive deleted) and we are ahead of your partners in technology...No I will not put this in writing because then the EPA will probably drag or (deleted) into court... they have already cost us enough money over the last 20 years. You know what you can do with your program. Click.' Nevertheless, over the next three years, [the contractor] continued to contact the same entity, who in turn, continued to decline enrollment within the program." (page 13)

RESPONSE: This sweeping conclusion appears to be based on a single anecdote. Understanding the details of the particular situation cited above serves to reveal exactly the reason we continue to work with program prospects, sometimes even in cases where the person contacted is initially not interested. The situation illustrated by this anecdote is sometimes found when we talk to individuals within an organization about Green Lights. In this instance, as with many, this remark reflects the belief of a particular person, not those of an organization. (Often the only knowledge a person has of EPA prior to talking about Green Lights has been confrontational, in which EPA was a regulator or an enforcer.) Once people understand Green Lights is a *voluntary* partnership program and that the government, through Green Lights, is looking to help them save money and improve the quality of their work space, they often change their mind. After working with us for a while many of these groups decide to join. The anecdote in the report was from a prospective participant, who, after a number of conversations with the EPA gained a better understanding of the program. He has changed his mind and will likely become a participant in the program in the near future. Recording specific details of the contractor's interaction with the participant allowed EPA to be sensitive and responsive to the prospects concerns.

16. STATEMENT: "CONCLUSION: While we believe the Green Lights program is a good idea, we also believe it is more costly than necessary." (p. 14)

RESPONSE: See response to statement #2, above.

17. STATEMENT: CHAPTER 2 RECOMMENDATION 1. "Establish a policy that: a) only entities who actually participate in Green Lights can be listed as participants, b) only such participants will be considered in regard to measuring the success of the program and c) entities that fail to implement Green Lights are dropped from the program." (p. 14)

RESPONSE: EPA has has effectively had the recommended policy in place since 1991. Participation in the Green Lights program is measured by several steps: joining the program, completing all profitable upgrades, and allowing for the time between these to conduct the surveys and carry out the upgrades. Therefore participants in the program include those who have committed to do the upgrades, those who are in the process of completing the upgrades and those who have finished. EPA uses all of these stages as measures of program success. As a result of using information about partner progress in all of these stages, we are able to determine the pollution prevented to date. We can also ascertain how much pollution will be prevented in the future. By understanding that Green Lights participants have five years to carry out their upgrades and by recognizing these organizations as participants in the program, EPA can effectively plan its work to assist participants maximize energy savings and pollution prevention.

In 1994, EPA designed and instituted a formal process for dropping organizations from the Green Lights program if they fail to implement the program. This is the first time such as process was necessary as the very first Green Lights partners had until 1996 to compete their upgrades. If a participant fails to send us an annual letter informing us of their progress to date. up to three reminder letters are sent. If no response is forthcoming and it becomes clear that the organization no longer intends to uphold their end of the commitment, then either they decide to leave the program on their own or they are asked to leave the Green Lights program by the EPA.

Note that one type of Green Lights participant is an Endorser. Endorsers sign concrete Memoranda of Understanding with EPA that contain specific steps that they agree to take to educate the public about the benefits of upgrading to energy efficient lighting systems through Green Lights. Endorsers are not required to upgrade their own space. However, just as the endorser receives a benefit of association with the highly regarded Green Lights program, Green Lights receives a benefit of more public education about the merits of the program from groups that building managers, senior executives and other key decision makers hold in great esteem.

18. STATEMENT: CHAPTER 2 RECOMMENDATION 2. "Instruct [the contractor] to take "no" for an answer if an entity continually declines to join Green Lights." (p.14)

RESPONSE: EPA has affirmatively followed the recommended policy since 1992. Since that time, EPA has identified those organizations that refuse to join Green Lights. These organizations are coded as "refusal" in our database and are not called for at least one year. After that, a call is placed (no more than once a year) to determine if there has been a change in company interest in the program.

Our experience has shown that careful, selected follow-up calls are important. The rapidly changing economy often dramatically affects the interest of potential participants in Green Lights. Many partners have joined the program after their management or their economic situation has evolved. For example, a major retail department store chain and an internationally famous fast food chain each initially declined to participate in the program. But three years after our initial contact, and many constructive meetings later, both companies were excited by the program and enthusiastically joined. One of the worlds largest soft drink companies took more than two years to decide to join the program. All three are partners in good standing and making important progress with the program. The retailing chain in particular expressed an early interest in cooperating with us in the Energy Star Buildings program.

The 1995 Green Lights Partner of the Year was a major oil company. This company earned this award for their outstanding progress in implementing the program, in educating other partners and potential partners about the benefits of participating in Green Lights, among other accomplishments. As a result of the company's positive experience with EPA's Green Lights program, they have expressed an interest in joining other partnership programs with EPA. They have also increased internal corporate environmental awareness and have assigned senior managers and staff to work full time on other pollution prevention and recycling efforts. Had we and our contractor taken an initial "no" for an answer, we and the partners would not have achieved these important goals.

19. STATEMENT: CHAPTER 2 RECOMMENDATION 3. "Direct [the contractor] to refrain from insensitive comments or recommendations in its reports to EPA on Green Lights entities." (p.14)

RESPONSE: We agree. Since 1993, we have instructed contractors and EPA staff to make only factual and sensitive comments into the database and to conduct all communications (i.e., meetings, letters, conversations etc.) they have with participants or prospective participants in this manner.

20. STATEMENT: CHAPTER 2 RECOMMENDATION 4. "Revise the November 1993 document which lists the 'Most Frequently Asked Questions on the EPA Green Lights Program,' to clarify the guidelines for leased space." (p. 14)

RESPONSE: We agree. That clarification language has been written and is in the revised Green Lights MOU (This MOU was effective March 13, 1996.). The fact sheet has also been revised.

21. STATEMENT: RECOMMENDATION (p. 15) EPA needs to become more discerning in assigning Green Lights projects, as there were instances where the Agency authorized [the contractor] to perform work that was questionable from the standpoint of either cost or content. We believe this occurred because EPA personnel did not analyze the cost effectiveness or necessity of tasks they assigned...We recommend that on future assignments, Agency managers take a closer look at exactly what they are tasking [the contractor] to do, and at how much each of the tasks will cost."

RESPONSE: EPA has instituted several steps to assure that Agency funds are spent in an effective, appropriate, frugal manner:

1. In 1994 , we created a pilot program in cooperation with the Office of Acquisition Management. Under this program, three senior contract officers are assigned exclusively to administer the Atmospheric Pollution Prevention Division's contracts. Unlike the typical situation in EPA, the contract officers have direct daily contact with branch chiefs, team leaders and WAMs with no intervening project officer. This allows more timely, detailed monitoring of the quality, quantity and timeliness of contractor assignments and work progress. It also creates a real time network which has been proven effective in alerting managers about potential and actual problems.

2. During the period of May- December 1994, the division hired 54 new staff and grew to a peak of 85 staff members. Most of the new employees were new to government service and to government contracting procedures. EPA worked to assure that all new staff promptly received the required training for work assignment managers. Special sessions of the WAM training course were offered exclusively for division staff during October 11-13, November 8-10 and November 29-December 1, 1994. In addition, special training sessions were held by branch chiefs and the contract officer to provide additional information to the WAMs.

3. The division reorganized in 1995. As part of this reorganization, teams were created in which team leaders and branch chiefs from related programs (for example, Green Lights marketing, recruitment, and customer support) meet regularly to cooperatively oversee the program development and implementation, including the determination of appropriate investments in contractor support. The cooperative, mutually supportive approach ensures that the expertise and advice of all relevant managers is available to inform important investment decisions, such as the necessity and magnitude of major work assignments to contractors.

4. In addition, all work assignments are reviewed before submission by the team leader and/or branch chief to assure that the requested work is necessary, appropriate and designed to be conducted in a cost effective manner. Even before the requirement was established in OAR, the division required all work assignments to be accompanied by independent government cost estimates. The process of preparing the estimates not only helps the WAM to identify the expected cost of the work, but also points out areas that are poorly planned or can be revised to reduce costs.

22. STATEMENT: CHAPTER 3: SOME GREEN LIGHTS ASSIGNMENTS WERE QUESTIONABLE (p.15) "...the Agency authorized [the contractor] to perform some work that was questionable from the standpoint of either cost or content."

RESPONSE: See responses to Statements 16, 17, and 18, 19 and 20.

23. STATEMENT: "There also appeared to be too much emphasis on reporting statistics to reinforce the Agency's promotion of the program."(p.15)

RESPONSE: See response to STATEMENT 1 where the November 1994 OIG report found "current program operations and internal controls to be adequate..."

24. STATEMENT: FIELD TRIPS TO HAWAII (p.15) "An EPA memorandum issued on April 14, 1992 stressed the importance of selecting conference and meeting locations that were beyond reproach; 'cities which could be construed as resort locations must be avoided.' Because of this memorandum as well as the fact that the participants visited did not need our help, we believe that EPA should have ascertained beforehand, whether or not there was any real need for a visit."

RESPONSE: We believe that the IG refers to Policy Announcement 94-10 from the Comptroller dated September 14, 1994, based on OMB Bulletin 93-11 issued April 1993. This memorandum states the policies that were in effect during the period reviewed by the IG. The policies remain in effect today. The memo provided guidance on selecting economical conference sites , preparing cost comparisons and selecting conference attendees. The memorandum does not ban or restrict travel for the conduct of routine business to these locations. No EPA personnel went on the trips in question.

EPA determined, in advance, that the trip to Hawaii was a highly effective use of our resources. Because of the fuel mix (highly dependant on petroleum and coal) in Hawaii, the pollution prevention potential is much higher in Hawaii than in most of the continental United States. Green Lights participants in Hawaii made a special effort to request on-site assistance. After further investigation, EPA determined that an in-person visit was appropriate. To maximize the efficiency of our travel dollars and time, the contractor met with a number of additional Green Lights participants while in Hawaii.

In communicating with Green Lights participants, EPA has a series of methods it can use The first is to write a letter. The next option is to have phone conversation with the program participant to resolve any issues or answer any questions. If neither of these methods works, EPA may authorize a contractor to go visit the participant to conduct on site, and/or face to face meetings. EPA is always informed by a contractor before travel is planned to approve of the trip. Approval is only given to worthwhile trips. The final option is to send an EPA person to the site to resolve any issues or answer any questions.

These case studies (cited in statements 17, 18 and 19) refer to activities during a trip to Hawaii made by the contractor. The purpose of this trip was to conduct mobilization meetings with new and current participants and to respond to a request for a meeting from a large bank that had recently joined Green Lights. In addition to the mobilization meeting, the trip included

meetings with two other accounts: a HMO and a major hotel chain.
The following discussion responds in detail to each case.

25. STATEMENT: Case No. 1 " The [contractor] representative made an implementation visit to this entity on August 1, 1994. We believe there was absolutely no need for the visit, as the [contractor] representative reported."(p.15-16)

RESPONSE : [The contractor] met with a large health care conglomerate. The purpose of this meeting was to meet with the GLID while we were in the area to maximize our travel dollars. No special trip was made to undertake this meeting. The meeting concentrated on financing issues. As a result of the meeting they have now completed their upgrades.

26. STATEMENT: Case No. 2 "The [contractor] representative made a proactive visit to this entity on August 1, 1994 . . . We believe this was another instance where there was no need for a field visit."(p.16)

RESPONSE: This meeting was held at the request of the Green Lights partner. The GLID had requested a meeting because, although he was doing well with the program, he needed to ensure that the rest of the upgrade process had senior management buy-in. Therefore, he requested that Green Lights conduct a meeting with senior management. Prior to the meeting, key bank officials neither knew nor supported the program. After the meetings, as the highlighted text in the report describes, the senior management of the bank became an active part of completing the upgrades at the bank.

As a result of this proactive meeting with the partner, they have become an excellent participant. To date, they have surveyed 64% of their square feet and have upgraded 40 branches (30% of their square feet). They are ahead of schedule, as they have been in Green Lights less than two years. The meeting was critical to building a highly effective partnership. As a result of the partners high level of commitment, they chose to volunteer as a Charter Partner in the Energy Star Buildings program.

27. STATEMENT: Case No. 3: "The [contractor] representative made a 'proactive' visit to this entity's GLID on August 2, 1994 . . . To summarize, [a contractor] representative visited Hawaii at government expense to explain Green Lights to entities that had only been in the program a short time. Despite [their] progress, [the contractor] was not entirely satisfied and recommended watching the GLID closely and prodding him to get reports sent in." (p.17)

RESPONSE: Prior to this trip, we had been unable to reach this participant by phone. The participant, a large hotel chain, had joined 5 months before the meeting nd it is the experience of the Green Lights program that early, proactive mobilization meetings are often critical to help a new participant effectively plan, and begin to implement, their upgrades. As a result of the proactive meeting with the GLID and establishing a relationship with him, this organization has become a vital part of the program. This organization no w has completed and submitted almost one million square feet of upgrades and has helped the Green Lights program with a number of demonstration upgrades, that are being shared with other program participants, to assist other partners within the hotel and other sectors. These would never have happened without a face to face meeting.

28. STATEMENT: "These were not the only [the contractor] visits to Hawaii on behalf of the Green Lights during fiscal year 1994. An October 1993 weekly status report . . . informed EPA of nine trips to take place between November 1993 and January 1994. Five trips were field visits and four involved Green Lights workshops."(p.18)

RESPONSE: The numbers in this statement are incorrect. The contractor has made a total of 4 trips to Hawaii over the life of the Green Lights program. One of these four trips was paid for by the State of Hawaii. The minimum number of persons necessary to conduct business traveled. Therefore, only one person went on three of the trips. A workshop for participants and potential participants was held during one trip. Two persons are required to successfully conduct a workshop. Other activities during this trip included a recognition event and signing ceremony with the Governor of Hawaii and marketing calls.

29. STATEMENT: OTHER QUESTIONABLE PROJECTS WORK ASSIGNMENT 2-21: "Green Lights generates an enormous amount of paperwork. . . . We recommend that the Agency reevaluate the need for the volume and content of the reports being submitted by EPA and in order only those reports that are actually needed to operate the program."(p.18)

RESPONSE: In late 1994 and early 1995, the Green Lights program conducted an evaluation of the reports generated by the contractor. EPA determined that three of the four reports were not needed on a monthly basis, but rather could be generated quarterly. This change became effective in early 1995.

The number of reports initially required under this work assignment were driven by the need to fully understand how to most efficiently operate the program. The Green Lights program is a different type of program than the traditional command and control regulatory programs implemented by EPA. During the development of this program, it was important to collect and analyze substantial operational information in order to maximize program effectiveness and minimize program cost. Over the last two years, the information required has been reduced greatly. For example, it was useful to know how many calls come into the hotline between 5-8 pm to ascertain whether or not it is prudent to keep the hotline open at that time.

The reports currently being produced are needed -- unnecessary reports that do not help in evaluating aspects of the program have been eliminated. We continuously monitor the effectiveness of the reports on ways to avoid paper (i.e., Internet, E-mail, etc.) or unnecessary work.

30. STATEMENT: WORK ASSIGNMENT 2-55: "Under this work assignment [the contractor] visited Green Lights partners in regard to the occupancy sensor outreach program . . . One of the seven partners chosen to be visited by [the contractor] ..... was [the contractor]."(p.19)

RESPONSE: The contractor's office was chosen as one of the sites because EPA wished to ascertain whether the contractor staff had adequate training to effectively provide advice to other participants. Contractor personnel effectively used this site as a demonstration site and conducted experiments with on-site input from EPA staff. In addition, this location provided EPA and the contractor with the opportunity to conduct practical experiments to improve the occupancy sensor outreach program. The site had the further advantage of requiring no funding for travel by contractors.

31. STATEMENT: WORK ASSIGNMENT 2-9: "At EPA's request, [the contractor's] major subcontractor faxed a letter to each of the 12 Green Lights Energy Star regional coordinators. ... we believe that this task should have been performed 'in-house' because it involved EPA Headquarters personnel requesting information from EPA regional personnel." (pollution prevention. 19-20)

RESPONSE: The event was being organized largely through the contractor. Therefore, to have the contractor fax out the request for information and to act as the coordinating point for the event was the most prudent use of resources and time.

32. STATEMENT: WORK ASSIGNMENT 2-16: "Under this work assignment, [the contractor] assembled a 62- page chronology of references to Green Lights or Energy Star programs that are found in the media. . . ." (Page 20-21)

RESPONSE: Green Lights closely monitors the activities that are undertaken and their results, including cost effectiveness and appropriateness. Learning about articles that appear in local newspapers and other media sources help to inform EPA about the visibility of the participants and their accomplishments.

33. STATEMENT: WORK ASSIGNMENT 2-16: "Under the same work assignment, [the contractor] was tasked to determine the effectiveness of a Public Service Advertisement in recruiting Green Lights prospects . . . [the contractor] informed EPA that the advertisement had little or no impact. Nevertheless, in its 1995 Green Lights Annual report, the Agency heralded the placement of the Metro advertisement as a noteworthy event."(pollution prevention. 20-21)

RESPONSE: It was critical to evaluate the effectiveness of the PSAs placed in the Metro to determine if it such a campaign was a good idea for expansion to other regions. The PSAs may have had little impact in the short term. EPA has found that PAS do have a positive effect in the long run.

Both the long term and the short term impact of PSAs are important to EPA. The short term results tell EPA about the immediate reaction to our message. EPA has a long term goal of improving public awareness. To help educate the public, the Green Lights logo and program name need to be seen by many people many times. It is difficult to assess the long term impact after only a short time. As with most campaigns of this type, it is necessary to continue efforts even before the results are measurable. The long term effect of an opportunity (such as the DC PSA campaign) to post the message in the public's eye cannot be measured but is important even though one PSA does not produce immediate results. Obtaining broad exposure using free access to space has been shown to be a valuable and cost effective way to promote participation in our voluntary programs.

34. STATEMENT: WORK ASSIGNMENT 2-19: "Under [this] work assignment, [the contractor] submitted a set of eight slides on the subject of 'sales' that had been compiled by the subcontractor for an EPA Divisional Deputy Director."(p.21)

RESPONSE: Rather than rely on outside vendors, EPA conducted in-house training using experienced and senior EPA program manager (deputy division director from a sister division). The purpose of the training was to teach junior staff on appropriate means to educate potential program participants regarding the benefits of voluntary pollution prevention programs. These slides used examples based on the experience of the speaker, which included a number of references to his work with the military to adopt voluntary programs. ,His slides therefore referred to items such as "F-14, F-16" and "preparing the product for sale" because these were examples of the speaker's successful program contacts with military program partners. In addition, Green Lights has a targeted effort to work with the Department of Defense and other federal entities. These experiences and the examples shared were very relevant.

Effective use of public education is essential to educate potential program participants about the benefits of joining. Modern marketing methods are a key to program success Appropriate use of sales techniques is an important tool in recruiting new participants. The use of a variety of marketing techniques have proven to be essential and effective in achieving our public education goals.

35: STATEMENT: RECOMMENDATION 1: "Require [the contractor] to provide detailed justification for their selection for a site visit and only approve site visits to participants that need help in establishing their Green Lights programs." (P. 26)

RESPONSE: This has always been our practice. Since the start of the contract, APPD has required detailed work plans from its contractors. Each WAM must approve of all trips taken by the contractor. The purpose of this approval process is to insure that all trips taken are necessary and promote the program to key interested and appropriate program participants. This requirement is an explicit part of the contract.

36. STATEMENT: RECOMMENDATION 2: "Work with Director, Office of Acquisition Management to review active works assignments under Green Lights to ensure they are necessary and appropriate and terminate work assignments which have no direct relation to energy consumption."

RESPONSE: EPA has established a pilot program to improve the quality of our use of our contract resources. As a result of this program, the Director of OAM has assigned a senior contracting officer to work directly and closely with APPD. One of the contracting officer's duties is to ensure that all work assignments are necessary and appropriate. We will work with OAM's representative to only start and continue work which is allowed under the scope of the contract and is necessary in support of the Division's activities.

37. STATEMENT: RECOMMENDATION 3: "Re-evaluate the need for the volume and the content of the Green Lights reports being submitted by [the contractor] and order those reports that are actually needed by the program."

RESPONSE: We have undertaken and finished this re-evaluation since the completion of this audit. In late 1994, and early 1995, the Green Lights program conducted an evaluation of the reports generated by the contractor. EPA determined that three of the four reports were not needed on a monthly basis, but rather could be generated quarterly. This change became effective in early 1995. We continue to evaluate the frequency and content of Green Lights reports and will assure that only necessary reports are obtained.

## OAR COMMENTS ON CHAPTER 4
## PROJECTS ESTIMATED TO TAKE MONTHS TOOK YEARS

1. STATEMENT: (Pg 27) EPA's heavy reliance on a major EPA contractor to support "Indoor Air Quality" projects dramatically increased the Agency's vulnerability to incur escalated costs.

RESPONSE: We are unable to find documentation in this report that shows this to have occurred. All work performed fell within the scope of the contract statement of work and was performed in compliance with good contracting practices. All contracts were awarded competitively, in compliance with FAR regulations. That EPA management utilizes the only contract vehicles available to them does not necessarily mean escalated costs will be incurred.

2. STATEMENT: (pg 27) Specifically, we found that indoor air quality projects had lingered on for years, greatly exceeding their original budgets and due dates.

RESPONSE: The OIG looked at three projects in the former Indoor Air Division: the Tools for Schools Kit (Schools Guide), a document intending to introduce indoor air quality to large building design professionals (Architect Guide), and a document for persons constructing new single family homes (Homes Manual). While we can fully concur with the fact that these projects took longer and cost more than originally planned or expected, we believe there is a great deal of pertinent information concerning the context and circumstances surrounding those delays which should be included in the report. We feel strongly this additional information not only provides sound reasoning as to the need for the delays, but also substantiates the basis for the increased costs.

First, indoor air quality is not a "mature" field from a scientific, legislative, or regulatory standpoint, as are many other EPA programs like water, hazardous wastes, pesticides, etc. Consequently, each of these documents was breaking new ground from a science and technological standpoint, and in a number of specific areas, critical scientific information necessary to provide complete information was simply not available. As a result, in some cases new information had to be developed and in others, careful and deliberate alternative approaches had to be devised.

Second, although a voluntary program, EPA guidance on any aspect of indoor air quality can have major economic and other impacts on a diverse cross-section of interests. In the case of the projects reviewed, these interests include many businesses such as product manufacturers, home-builders, and commercial real estate developers and bankers, and in the case of the schools guidance, on thousands of primary and secondary schools systems that have unique and compelling needs which had to be met. Because of the voluntary nature of EPA's indoor air program, success has depended upon reaching consensus with all affected interests on what is fair and reasonable to say about a given issue. This requires extensive opportunity for review and comment by affected parties, combined with a willingness to make substantial changes in direction and content, to produce a product that is accurate as well as useful to its intended audience. This process takes a great deal of time and in some cases, such as with the homebuilders guide and the schools guidance, necessitated substantial redirection of the effort.

More specific information on each of the three projects referenced in the Draft Audit Report follow:

## 1. "SCHOOLS:" INDOOR AIR QUALITY GUIDE:

In summary, the OIG's draft report basically states that EPA took too long to complete the schools guidance, spent too much money, and that one word, "custodian", was missing from the guidance, (hereafter referred to as the "Kit").

**Misleading Inclusion of Costs** -- The chart on page 27 of the report states the costs associated with the development of the Kit as $736,000. We believe this total to be misleading. This total should be reduced by $156,000 which EPA paid directly to the Government Printing Office for the printing of the Kit, and therefore, is not part of the costs incurred by the contractor. This figure should further be reduced by $138,000, as these are costs associated with the developent of a video that was produced independent of the Kit. Therefore, we believe the chart on page 27 should be corrected to show $443,000, not $736,000 now listed.

**"Custodians" ARE Significantly Addressed** -- The audit report implies $47,000 in project funds associated with a revision to address school custodians were improperly spent because the Kit "inexplicably...**made no mention of custodians whatsoever.**" Although the audit report is correct in stating that the word "custodian" can not be found in the Kit, significant portions of the Kit are clearly directed to "custodians". Note, in particular, the "Building Maintenance Checklist" and "Ventilation Checklists", both of which are targeted to "custodians". It was requested this singular term not be used because many regions of the country use equivalent, yet different, terms such as "janitor" and "maintenance personnel".

**More Paperwork does not Indicate Poor Management** -- The report seems to have a negative inference by noting "3 contracts, 9 individual work assignments, and 13 work assignment modifications." The EPA AR mandates new work assignments be written each year, and with each change in contract. Also, many of the work assignment modifications are "paperwork" induced, not the result of a lack of management, but rather documenting such actions as change in completion dates, increases in level-of-effort, and other administrative actions.

**Many Dates and Statements are Incorrect** -- The report states that "The manual was further delayed" to make a videotape. The Kit was in no way delayed by the production of the video, rather the Kit began the official printing process in April 1995, two months before the original work assignment for the video was submitted. Also, the report implies that EPA was somehow responsible for not releasing the Kit before December 6, 1995. If there had not been significant printing errors, EPA would have released the Kit when it was contracted to be delivered in July 1995. EPA should not be held liable for delays which are the sole responsibility of the US Government Printing Office.

**Quick versus Practical** -- The audit report is fixated upon the original work assignment completion date, and does not seem to include any consideration for the level of appropriate flexibility which helped ensure that the final product was of high quality and practicality. The report appears to imply that if the original date had been strictly adhered to, then the mission would have been met.

The process of reaching consensus among all affected interests was particularly time consuming, yet crucial to the success of the Kit. EPA set out to help schools prevent and fix indoor air quality problems cost-effectively, but was initially met with substantial mistrust and suspicion engendered by the experience which schools had with EPA and asbestos. In that case, schools were forced to spend vast resources on what is perceived by them to be a very low actual risk. Schools are very sensitive to having priorities and costs thrust upon them. EPA committed to school organizations that it would produce only that guidance that would be flexible, easy to use, low cost, and deemed by them to be of value.

The draft audit report states that the Kit development represents the most "egregious" example of delay. We agree our original completion date underestimated the tremendous amount of time needed to reach consensus and "buy-in" from interested parties. But, because of EPA's commitment to address the needs and constraints of the 110,000 primary and secondary schools--a commitment which contributed to project delays and increased costs referenced in the audit report--the result has been 6 major school organization co-sponsors, endorsement by other key school organizations, and widespread consensus that EPA has produced a cost-effective product that will truly be of assistance rather than adding to the already significant burdens borne by schools.

The real test of any work product should be its usefulness, not the amount of time it takes to complete the product. Schools state the Kit is an outstandingly good example of good government.

2) Architects Indoor Air Quality Guidance

The causes of delay in the draft guide for architects are twofold. First, scientific understanding of the relationship between many building design factors and problems experienced by building occupants is at an embryonic stage. The area of greatest scientific activity in the indoor air field today in fact concerns the fundamental design issue of which materials to use in the building, based on the materials' emissions of various indoor air contaminants. Little scientific information and much controversy exists in this area, making each statement by EPA in the draft guide highly controversial. While EPA was aware that little hard information on material selection would be available for the first iteration of the introduction to IAQ for architects, there were nevertheless many design issues which could be discussed and which practicing architects and engineers are sorely in need of. These include such issues as moisture control and placement of air intakes and exhausts, to name only two.

While the technical issues surrounding this document are significant, they certainly are resolvable. Unfortunately, severe budget cuts, and the existing hiring freeze have forced us to place this project on hold.

Despite the fact that EPA has not officially published this document, it is inaccurate to say that "the Agency essentially had nothing." A complete draft is in hand which has already been made available through the external review process and has, in fact, been utilized by other organizations that do not have to meet the same standard of scientific defensibility that EPA must meet. However, because there is still demand for an EPA-endorsed version, this project has not been cancelled.

3) "Homes" Indoor Air Quality Manual

While an excellent draft is now in hand and ready for external review, there remains significant controversy over the approach taken. This disagreement over approach has necessitated a complete redesign and rewrite of the project, which resulted in accompanying delays. Pending completion of strategic planning by newly created teams in the reorganized Indoor Environments Division, it is anticipated that this project will be largely managed in-house and brought to completion.

## AUDIT RECOMMENDATIONS:

**Recommendation:**

- Work with the Director, Office of Acquisition Management, to: (a) immediately review all open work assignments to ensure that they are necessary, appropriate, and will be completed timely; (b) terminate work assignments which are not necessary; and, (c) require adequate justification for continuing work assignments with significant delays or increased costs.

**Response**

A review of all open work assignments has already been completed.

**Recommendation:**

- Emphasize to program personnel the need to effectively plan projects at time of issuance in order to avoid unnecessary modifications and increased costs."

**Response:**

We concur with this recommendation.

# Green Lights Management Report
# Table 4, Implementation Barriers Analysis Report

*September 30, 1995*

| Implementation Barrier | Percentage of All Participants | | | | Percentage of Non - Reporting Participants | | | | Percentage of Participants Behind Schedule for Completed Surveys | | | | Percentage of Participants Behind Schedule for Completed Upgrades | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | #1 | #2 | #3 | ANY | #1 | #2 | #3 | ANY | #1 | #2 | #3 | ANY | #1 | #2 | #3 | ANY |
| Total number of Participants with Barriers | 1,036 | 298 | 129 | 1 460 | 238 | 73 | 32 | 343 | 703 | 264 | 120 | 1,077 | 621 | 241 | 113 | 975 |
| Total number for Blank Barriers | 428 | 428 | 428 | 428 | 68 | 68 | 68 | 68 | 269 | 269 | 269 | 269 | 283 | 283 | 283 | 283 |
| Total for NONE Barrier | 52 % | 7 % | 0 % | 38 % | 46 % | 10 % | 0 % | 34 % | 42 % | 6 % | 0 % | 28 % | 37 % | 5 % | 0 % | 25 % |
| CORP 1 Corporation Lacks Money | 6 % | 8 % | 6 % | 6 % | 8 % | 10 % | 3 % | 7 % | 6 % | 9 % | 6 % | 7 % | 8 % | 10 % | 6 % | 8 % |
| CORP 2 Corporation Lacks Commitment | 4 % | 10 % | 7 % | 5 % | 6 % | 11 % | 13 % | 7 % | 6 % | 10 % | 8 % | 7 % | 6 % | 12 % | 7 % | 7 % |
| CORP 3 Resistance From Divisions/Facilities | 2 % | 2 % | 7 % | 2 % | 1 % | 0 % | 6 % | 1 % | 3 % | 2 % | 8 % | 3 % | 3 % | 2 % | 7 % | 3 % |
| CORP 4 Reorganization | 6 % | 5 % | 3 % | 6 % | 9 % | 7 % | 9 % | 8 % | 8 % | 5 % | 3 % | 7 % | 9 % | 5 % | 4 % | 7 % |
| CORP 5 Primarily Leased Space | 2 % | 1 % | 3 % | 2 % | 1 % | 0 % | 3 % | 1 % | 2 % | 1 % | 3 % | 2 % | 2 % | 0 % | 4 % | 1 % |
| Total for CORP Barrier | 19 % | 26 % | 26 % | 21 % | 22 % | 27 % | 34 % | 24 % | 24 % | 28 % | 27 % | 26 % | 26 % | 28 % | 27 % | 27 % |
| GLID 1 GLID Lacks Commitment | 4 % | 7 % | 4 % | 6 % | 6 % | 8 % | 9 % | 6 % | 4 % | 7 % | 3 % | 6 % | 5 % | 7 % | 4 % | 6 % |
| GLID 2 GLID Lacks Priority | 6 % | 14 % | 13 % | 7 % | 4 % | 11 % | 9 % | 6 % | 6 % | 14 % | 13 % | 8 % | 8 % | 14 % | 14 % | 9 % |
| GLID 3 Ineffective GLID | 2 % | 3 % | 9 % | 3 % | 3 % | 3 % | 9 % | 3 % | 2 % | 3 % | 8 % | 3 % | 3 % | 3 % | 8 % | 4 % |
| GLID 4 GLID Lacks Authority | 0 % | 2 % | 3 % | 1 % | 0 % | 1 % | 0 % | 0 % | 0 % | 2 % | 3 % | 1 % | 1 % | 2 % | 4 % | 1 % |
| Total for GLID Barrier | 11 % | 26 % | 29 % | 16 % | 11 % | 23 % | 28 % | 16 % | 13 % | 26 % | 28 % | 18 % | 14 % | 27 % | 29 % | 19 % |
| TECH 1 Surveying Difficulties | 1 % | 3 % | 2 % | 1 % | 0 % | 4 % | 0 % | 1 % | 1 % | 2 % | 3 % | 1 % | 1 % | 3 % | 3 % | 2 % |
| TECH 2 Specification Difficulties | 0 % | 4 % | 5 % | 2 % | 0 % | 4 % | 13 % | 2 % | 0 % | 4 % | 6 % | 2 % | 0 % | 4 % | 6 % | 2 % |
| TECH 3 Installation Difficulties | 0 % | 1 % | 2 % | 1 % | 0 % | 3 % | 0 % | 1 % | 0 % | 1 % | 2 % | 1 % | 0 % | 1 % | 2 % | 1 % |
| TECH 4 Inferior Upgrades | 2 % | 4 % | 5 % | 3 % | 3 % | 3 % | 9 % | 4 % | 2 % | 5 % | 4 % | 3 % | 1 % | 4 % | 5 % | 2 % |
| TECH 5 Disposal Issues | 0 % | 0 % | 1 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 1 % | 0 % | 0 % | 0 % | 1 % | 0 % |
| Total for TECH Barrier | 3 % | 12 % | 16 % | 6 % | 6 % | 14 % | 22 % | 8 % | 3 % | 12 % | 16 % | 7 % | 3 % | 12 % | 17 % | 7 % |
| PROG 1 Unwilling To Report | 1 % | 2 % | 6 % | 2 % | 1 % | 4 % | 3 % | 2 % | 2 % | 3 % | 5 % | 2 % | 2 % | 3 % | 4 % | 2 % |
| PROG 2 Reporting Confusing | 3 % | 6 % | 6 % | 4 % | 1 % | 3 % | 0 % | 1 % | 4 % | 6 % | 7 % | 4 % | 3 % | 5 % | 6 % | 4 % |
| PROG 3 Lacks Information To Report | 2 % | 6 % | 6 % | 3 % | 1 % | 4 % | 6 % | 2 % | 2 % | 6 % | 7 % | 3 % | 2 % | 5 % | 6 % | 3 % |
| PROG 4 Will Report Later | 9 % | 16 % | 12 % | 10 % | 11 % | 16 % | 6 % | 11 % | 10 % | 13 % | 12 % | 11 % | 10 % | 16 % | 11 % | 11 % |
| PROG 5 Reporting Using Another Format | 1 % | 1 % | 0 % | 1 % | 3 % | 0 % | 0 % | 2 % | 2 % | 1 % | 0 % | 1 % | 2 % | 1 % | 0 % | 1 % |
| Total for PROG Barrier | 16 % | 30 % | 29 % | 20 % | 17 % | 26 % | 16 % | 19 % | 18 % | 28 % | 30 % | 22 % | 19 % | 29 % | 27 % | 22 % |

Green Lights

## Green Lights Management Report
## Table 4, Implementation Barriers Analysis Report

*September 30, 1995*

Page 2

| Implementation Barrier | Percentage of Participants by Months in Program | | | | | | | | Percentage by Recruited Total SqFt of Participant | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-12 | 13-24 | 25-36 | 37-48 | 49-60 | 61-72 | 73-84 | 85-96 | 0 - 1,000 | 1,001 - 100,000 | 100,001 - 1,000,000 | 1,000,001 - 10,000,000 | above 10,000,000 |
| Total number of Participants with Barriers | 30 | 164 | 361 | 283 | 217 | 0 | 0 | 0 | 22 | 385 | 286 | 263 | 79 |
| Total number for Blank Barriers | 156 | 206 | 39 | 10 | 18 | 0 | 0 | 0 | 4 | 140 | 166 | 106 | 12 |
| Total for NONE Barrier | 67 % | 68 % | 62 % | 36 % | 45 % | 0 % | 0 % | 0 % | 64 % | 63 % | 49 % | 43 % | 33 % |
| CORP 1 Corporation Lacks Money | 10 % | 4 % | 4 % | 6 % | 8 % | 0 % | 0 % | 0 % | 0 % | 3 % | 5 % | 8 % | 10 % |
| CORP 2 Corporation Lacks Commitment | 0 % | 2 % | 3 % | 5 % | 7 % | 0 % | 0 % | 0 % | 14 % | 2 % | 3 % | 6 % | 8 % |
| CORP 3 Resistance From Divisions/Facilities | 0 % | 0 % | 1 % | 3 % | 4 % | 0 % | 0 % | 0 % | 0 % | 0 % | 1 % | 3 % | 13 % |
| CORP 4 Reorganization | 3 % | 5 % | 4 % | 9 % | 6 % | 0 % | 0 % | 0 % | 5 % | 6 % | 7 % | 7 % | 5 % |
| CORP 5 Primarily Leased Space | 0 % | 1 % | 2 % | 2 % | 1 % | 0 % | 0 % | 0 % | 5 % | 3 % | 1 % | 1 % | 1 % |
| Total for CORP Barrier | 13 % | 12 % | 13 % | 26 % | 24 % | 0 % | 0 % | 0 % | 23 % | 12 % | 16 % | 24 % | 35 % |
| GLID 1 GLID Lacks Commitment | 0 % | 2 % | 5 % | 3 % | 8 % | 0 % | 0 % | 0 % | 0 % | 4 % | 5 % | 3 % | 4 % |
| GLID 2 GLID Lacks Priority | 0 % | 3 % | 4 % | 8 % | 3 % | 0 % | 0 % | 0 % | 6 % | 3 % | 8 % | 4 % | 9 % |
| GLID 3 Ineffective GLID | 0 % | 2 % | 1 % | 3 % | 2 % | 0 % | 0 % | 0 % | 0 % | 1 % | 3 % | 2 % | 1 % |
| GLID 4 GLID Lacks Authority | 0 % | 1 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 1 % | 0 % |
| Total for GLID Barrier | 0 % | 8 % | 10 % | 14 % | 11 % | 0 % | 0 % | 0 % | 5 % | 8 % | 14 % | 10 % | 14 % |
| TECH 1 Surveying Difficulties | 0 % | 1 % | 0 % | 1 % | 1 % | 0 % | 0 % | 0 % | 5 % | 0 % | 1 % | 1 % | 1 % |
| TECH 2 Specification Difficulties | 0 % | 1 % | 1 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 1 % | 1 % | 0 % |
| TECH 3 Installation Difficulties | 0 % | 0 % | 0 % | 1 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 1 % | 0 % | 0 % |
| TECH 4 Inferior Upgrades | 0 % | 1 % | 2 % | 2 % | 3 % | 0 % | 0 % | 0 % | 0 % | 2 % | 2 % | 2 % | 0 % |
| TECH 5 Disposal Issues | 3 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % |
| Total for TECH Barrier | 3 % | 2 % | 3 % | 4 % | 4 % | 0 % | 0 % | 0 % | 5 % | 2 % | 6 % | 4 % | 1 % |
| PROG 1 Unwilling To Report | 0 % | 1 % | 0 % | 2 % | 2 % | 0 % | 0 % | 0 % | 0 % | 1 % | 2 % | 1 % | 3 % |
| PROG 2 Reporting Confusing | 3 % | 0 % | 2 % | 3 % | 4 % | 0 % | 0 % | 0 % | 0 % | 2 % | 1 % | 4 % | 4 % |
| PROG 3 Lacks Information To Report | 0 % | 1 % | 1 % | 2 % | 1 % | 0 % | 0 % | 0 % | 0 % | 1 % | 2 % | 2 % | 3 % |
| PROG 4 Will Report Later | 13 % | 10 % | 7 % | 12 % | 8 % | 0 % | 0 % | 0 % | 5 % | 11 % | 9 % | 8 % | 6 % |
| PROG 5 Reporting Using Another Format | 0 % | 0 % | 0 % | 2 % | 3 % | 0 % | 0 % | 0 % | 0 % | 0 % | 1 % | 3 % | 3 % |
| Total for PROG Barrier | 17 % | 12 % | 12 % | 22 % | 18 % | 0 % | 0 % | 0 % | 5 % | 14 % | 16 % | 18 % | 18 % |

# Memorandum of Understanding Between
# The United States Environmental Protection Agency
# and
# Sample Corporation

**I. Common Agreements and Principles**

A. This is a voluntary agreement between Sample Corporation ("Green Lights Partner") and the United States Environmental Protection Agency (EPA) by which Green Lights Partner joins EPA's Green Lights Program. This agreement can be terminated by either party without penalties or liability to either party.

B. Green Lights Partner and EPA agree that the primary purpose of the Green Lights Program is to encourage U.S. organizations to install energy-efficient lighting in order to prevent the creation of air pollution (including greenhouse gases, acid rain emissions, air toxics, and tropospheric ozone), solid waste and other environmental impacts of electricity generation. Green Lights is part of a larger program, and Partners are encouraged to explore additional opportunities for pollution prevention by joining EPA's Energy Star Buildings Program and the Energy Star Computers Program. Either or both of those programs may be entered by signing addenda to this Memorandum of Understanding.

C. Green Lights Partner and EPA agree that installation of energy-efficient lighting can improve profitability and competitiveness, and enhance national energy security.

D. Green Lights Partner and EPA agree that energy-efficient lighting can maintain or enhance lighting quality and can improve employee productivity and customer satisfaction.

E. Green Lights Partner and EPA agree that communicating Partner's commitments (as stated in this MOU) to the public demonstrates:

- the concern of Green Lights Partner for the environment,
- the vitality of the free enterprise system in reducing costs, and
- the capability of voluntary programs to achieve national goals with minimal regulation.

F. Green Lights Partner and EPA agree that maintaining public confidence in the credibility of the Green Lights Program and its participants is critical to achieving the shared goals stated above.

**II. Green Lights Partner's Responsibilities**

A. **Definition of Partner and Eligibility.** A Green Light Partner is an organization that joins the Green Lights Program by signing this Memorandum of Understanding. Any organization (including those within or subject to review by a parent organization) that has financial and operational control of any of its own facilities may join Green Lights.

Green Lights Partner agrees that it has financial and operational control of some or all of its facilities, and further agrees that its membership in Green Lights commits all of its component suborganizations (such as subsidiaries, divisions, campuses, etc.) over which it can and/or does exercise financial or operational control. In completing the square footage tally on Appendix A, Green Lights Partner agrees to include all facilities subsumed by this definition.

B. **Green Lights Implementation Director.** Green Lights Partner agrees to appoint a senior representative of the organization (designated on Appendix A) as Green Lights Implementation Director. The Green Lights Implementation Director will be the person responsible for ensuring that Green Lights Partner successfully completes its commitments as stated in this MOU, and Green Lights Partner agrees to assign the authority to the Implementation Director needed to execute that responsibility. The Green Lights Implementation Director's responsibilities include:

- establishing and overseeing Green Light Partner's 5-year implementation plan, which includes the securing of personnel and financial resources, and the scheduling of upgrade projects,
- directing Green Lights Partner's lighting upgrades,
- coordinating Green Lights Partner's participation in Green Lights activities,
- facilitating communication with the Green Lights Program Office at EPA, and
- annual reporting to EPA of Green Lights Partner's lighting surveys and upgrades.

Green Lights Partner agrees to notify EPA in writing within two weeks of any change in the designation of the Green Lights Implementation Director.

C. **Communications Director.** Green Lights Partner agrees to appoint a representative of the organization (designated on Appendix A) as Green Lights Communications Director. The Communications Director will direct Green Lights Partner's communications effort to ensure (as deemed appropriate by Green Lights Partner) that the organization is properly recognized for its environmental protection achievements through Green Lights, and, in addition, to educate all employees, stockholders, and customers about the Program. Green Lights Partner agrees to notify EPA in writing within two weeks of any change in the designation of the Green Lights Communications Director.

D. **Staff Commitment.** Based on the experience of Partners who have already joined the Green Lights Program, Green Lights Partner should anticipate devoting a combination of internal (staff) and external (consultant/contractor) personnel resources at the approximate level of 1 person-year for every 5 million square feet of facility space, for the purpose of surveying buildings, specifying upgrades, supervising upgrade installations, and managing other aspects of Green Lights Partner's participation in Green Lights. Green Lights Partner agrees to provide adequate staff to fulfill the commitments it undertakes in the MOU.

E. **Financial Commitment.** Green Lights Partner recognizes that, although energy-efficient lighting upgrades are highly profitable (typically earning 20-40% post-tax rates of return), an initial investment of $0.50-2.00 per square foot (depending upon existing equipment, purchasing strategy, and scope of the lighting upgrades) will be required on average to implement its participation in Green Lights over the initial 5-year period. Green Lights Partner agrees to allocate each year sufficient funds (or secure third-party financing) to allow for the investment in energy-efficient lighting to meet its commitments under this agreement.

F. **Energy-Efficient Lighting Upgrades (terms in bold defined in Appendix B)**

Green Lights Partner agrees to:

- survey the lighting in all of the square footage of its **eligible facilities**,
- consider the full range of lighting technology, design, and maintenance options that can reduce energy use, and
- upgrade the lighting with the set of options that, taken as a whole on a facility-aggregate basis, maximizes energy savings and that is also (1) **profitable** and (2) meets Green Lights Partner's **lighting quality** objectives.

Green Lights Partner agrees to complete within five years:

- lighting surveys of 100% of the square footage of its eligible facilities, and
- upgrades of 90% of the square footage of its eligible facilities other than those that are **no-upgrade facilities**

EPA and Green Lights Partner agree that the five year schedule will begin on the first day of Green Lights Partner's first fiscal year that starts after the date that Green Lights Partner signs this MOU. Green Lights Partner agrees that it will complete its lighting surveys and upgrades at least as rapidly as the following schedule.

Cumulative Percentage of Square Footage:

| End of Year | Complete Surveys | Completed |
|---|---|---|
| 1 | 5% | 1% |
| 3 | 90% | 40% |
| 5 | 100% | 90% |

G. **Predominantly Short-Term Leased Space.** Notwithstanding paragraph II.F, if Green Lights Partner's facilities are comprised of more than 75 percent short-term (less than 5 years remaining) leased space, Green Lights Partner agrees to:

- survey at least 50% of its short-term leased space,
- consider the full range of lighting technology, design, and maintenance options that can reduce energy use, and
- upgrade the lighting with the set of options that, taken as a whole on a facility-aggregate basis, maximizes energy savings and that is also (1) profitable and (2) meets Green Lights Partner's lighting quality objectives.

For short-term leased space, a project is defined as "profitable" when it provides a payback term shorter than the remaining term of the lease. Green Lights Partner agrees to complete within 5 years upgrades of 50% of the square footage of its short-term leased facilities other than those that are "no-upgrade facilities."

H. **Quick Start.** Within 180 days of signing this MOU, Green Lights Partner agrees to:

1. Specify and install a 5,000-15,000 square foot demonstration lighting upgrade with technical cooperation from EPA, if needed. If Green Lights Partner's total square footage is less than 5,000 square feet, participants will do demonstration upgrade of at least 50% of their square footage.
2. Create a list of all facilities to be surveyed and/or upgraded under this agreement, their location, square footage, projected survey date, and pre-survey estimated upgrade budget. EPA agrees to provide assistance with budget estimation, upon Green Lights Partner's request.
3. Conduct, in cooperation with EPA, a kick-off meeting. EPA agrees that it will provide materials, orientation information, planning assistance, technical training, and networking ideas at or to this kickoff meeting. Green Lights Partner agrees that all parts of its organization with a stake in Green Lights (such as facilities

management, environmental compliance, human resources, corporate communications, strategic planning, financial resources, etc.) will be represented by a senior manager at the kick-off meeting. EPA's participation may take the form of supplying materials, participating via telephone or videoconference, or sending Green Lights staff or consultants to the meeting at the request of Green Lights Partner.

I. **Upgrades Completed Prior to Joining Green Lights.** EPA and Green Lights Partner agree that Green Lights Partner may count toward its upgrade commitment lighting upgrades that were completed fewer than 18 months prior to joining Green Lights, provided that the upgrades meet the Green Lights Program standards and proper documentation is provided (see "Reporting," below). EPA and Green Lights Partner agree that facilities in which upgrades were completed earlier than 18 months prior to Green Lights Partner's joining Green Lights shall be surveyed, and, according to the criteria of this MOU, upgraded. Based on the experience of Green Lights Partners already in the Green Lights Program, it is common that a new lighting survey would determine that no additional measures are warranted in a previously upgraded facility, provided that the earlier upgrade was done in a thorough manner.

J. **Reporting.** Green Lights Partner agrees to submit Green Lights Implementation Reports (blank copy attached as Attachment D) or the equivalent Electronic Progress Report (diskette available upon request) to EPA for each lighting survey and upgrade project that it undertakes. Green Lights Partner agrees to submit reports at least annually to:
- establish the credibility of Green Lights Partner's pollution-prevention achievements, • demonstrate the benefits of energy-efficient lighting to Partner's management, customers, and other stakeholders, and to • increase participation by other organizations in Green Lights.

More frequent reporting is encouraged in order to avoid the need for large "batch" processing by either Green Lights Partner or EPA. EPA agrees to assist Green Lights Partner with completing Partner's first implementation report, if Partner requests.

If Green Lights Partner has not undertaken any new surveys or upgrades since its previous membership anniversary, Green Lights Partner agrees to send a letter to EPA in lieu of the Green Lights Implementation Report.

K. **New Construction.** Green Lights Partner agrees to design all new facilities in compliance with applicable codes and regulations. When designing new lighting systems in areas that are not intended for manufacturing or commercial or industrial processing, Green Lights Partner further agrees to at least meet (and attempt to exceed) the most current lighting energy standards, defined as follows:

1. Until December 31, 1994, the building energy guidelines of the U.S. Department of Energy, or any new Illuminating Engineering Society (IES) lighting energy standard (if one has been issued), or ASHRAE/IES 90.1-1989 if no new IES standard has been issued.
2. Following January 1, 1995, any post-1989 IES lighting energy standard (if one has been issued), or the building energy guidelines of the U.S. Department of Energy, or another post-1989 building energy standard more stringent than ASHRAE/IES 90.1-1989 that has been created via an industry/professional/public consensus process.

Green Lights Partner agrees that all new leases that it signs (whether as a lessor or lessee) lasting 5 years or longer will be treated as "New Construction."

L. **Re-Surveys.** Because of the continuing improvements in and falling prices of energy-efficient lighting equipment, Green Lights Partner agrees to re-survey facilities and reanalyze options at all eligible facilities no later than five years after completing an upgrade at that facility or determining that the facility was a "no-upgrade facility." Green Lights Partner agrees to implement options that meet the Green Lights upgrade criteria that then exist within five years of the re-survey.

M. **Employee Education.** Green Lights Partner agrees to educate its employees about the economic and environmental advantages of energy-efficient lighting and, to the extent that is possible and consistent with the organization's policies, to encourage employees to purchase such products for their homes.

N. **Communication.** Green Lights Partner agrees to cooperate with EPA efforts to help raise public awareness of the Green Lights Program and of the benefits of energy-efficient lighting in general. This could include Green Lights Partner's preparation of case studies, advertisements, and press releases and their distribution to the media, employees, customers, and stockholders, other Green Lights participants, and potential participants. Green Lights Partner agrees to provide at least one case study to EPA by the end of its second year of membership.

O. **Non-Endorsement.** Green Lights Partner agrees that participation in the Green Lights Program, use of the Green Lights Program logo, or any publicity relating to its participation in the Green Lights Program does not constitute EPA's endorsement of Green Lights Partner for anything other than its commitment to install energy-efficient lighting. Green Lights Partner agrees that it will not imply otherwise.

## III. EPA's Responsibilities

A. **Liaison.** EPA agrees to designate a single liaison point for the Green Lights Program, and will attempt to notify Green Lights Partner within 2 weeks of any change in the designated liaison. The liaison is: Chief, Green Lights Branch; U.S. EPA (6202J); 401 M Street, SW; Washington, DC 20460, PH# 202-233-9120; FAX # 202-233-9569; 202-775-6650 (hotline).

B. **Technical Support.** EPA agrees to assist Green Lights Partner in adopting new cost-effective lighting technologies in the following ways:

1. EPA agrees to provide to Green Lights Partner a comprehensive summary of the best available information about energy-efficient lighting and implementation methods.
2. EPA agrees to offer workshops and training courses that Green Lights Partners may attend. These workshops and training courses will teach Green Lights Partners about energy-efficient lighting technologies, analytical techniques, and the use of technical tools developed by the Green Lights Program.
3. EPA agrees to provide lighting analysis software designed to help Green Lights Partner conduct their lighting surveys, complete their options analyses, and choose the most energy-efficient and profitable lighting upgrade package.
4. EPA agrees to manage Green Lights Allies Programs in which lighting manufacturers, installation companies, electric utilities, lighting equipment distributors, and lighting surveyors agree to follow specific criteria.
5. EPA agrees to support an independent lighting product information program that will test lighting products on a name-brand basis. EPA further agrees to provide Green Lights Partner with a copy of each report produced by this program.
6. EPA agrees to provide Green Lights Partner with a comprehensive directory (updated semi-annually) of utility rebate programs in the U.S. In addition, EPA agrees to provide a similarly updated directory of non-utility financing organizations (such as leasing companies and energy service companies) that provide financing for energy-efficient lighting upgrades.
7. EPA agrees to operate informational hotlines for Green Lights Partner to provide Green Lights Partner with the most up-to-date information available on energy-efficient lighting, implementation techniques, and the Green Lights Program.

C. **Recognition.** EPA agrees to provide Green Lights Partner with recognition for its public service in protecting the environment by:
- publishing articles and performing analyses about the pollution prevented by participants,
- organizing at least one major media event each year,
- publishing articles describing the Green Lights Program and organizations that have completed outstanding lighting upgrades, and
- creating public service advertisements that raise awareness of the program as a whole.

D. **Advertising.** EPA agrees to work with Green Lights Partners independently and/or in conjunction with other Partners to develop advertisements publicizing Green Lights Partners' involvement in the Green Lights Program. Due to limited advertising space and varying audiences, EPA may, on occasion, work with selected Green Lights Partners to develop advertisements. Green Lights Partners may be invited to participate in an advertisement on the basis of such criteria as organization size (e.g., square feet or number of employees), date of entry into the Program, type of commercial/industrial sector, scope of organization (e.g., national, regional, local), organization headquarters location, or other practical limitations.

## IV. Use of EPA-Developed Materials

A. **EPA Materials.** Both parties to this agreement agree that EPA-developed publications are a valuable tool in educating the public about the pollution-prevention benefits of energy-efficient lighting and the Green Lights Program.

B. **Green Lights Logo.** EPA agrees to permit Green Lights Partner to use the Green Lights Partner logo for use on non product-specific materials that will publicize Green Lights Partner's participation in the Green Lights Program. Green Lights Partner agrees that appropriate use of the EPA Green Lights Program logo is encouraged by EPA, but that such use does not constitute EPA's endorsement of Green Lights Partner's products or services.

C. **Partners Who Are Part of the Lighting Industry.** Where Green Lights Partner, or a component part of Green Lights Partner, has also joined the Green Lights Program as an Ally, Green Lights Partner agrees that it will use the Ally logo with the EPA disclaimer on any materials relating to its involvement in the manufacture, distribution, or installation of lighting products or the provision of lighting-related services (including sale of electricity and DSM services), and will conform with the Ally logo guidelines (sample available for review). Where Green Lights Partner, or a component part of Green Lights Partner, is a member of the lighting industry but has not joined Green Lights as an Ally, Green Lights Partner agrees that it will not use the Green Lights Partner logo on any materials relating to its involvement in the manufacture, distribution, or installation of lighting products or the provision of lighting-related services (including sale of electricity and DSM services).

D. **EPA Materials.** EPA agrees to provide to Green Lights Partner, at Partner's request, available camera-ready negatives, mechanicals, and other directly reproducible material from which Green Lights Partner can create:

1. Green Lights brochures, Light Briefs, and video(s)
2. Green Lights Program logo
3. Other Green Lights materials

Green Lights Partner agrees to return to EPA the directly-reproducible material identified above within 30 days of receipt.

E. **No Charge.** EPA agrees not to charge Green Lights Partner for such materials.

F  Reproduction of EPA Materials.  Green Lights Partner agrees to reproduce such EPA-developed materials faithfully, without altering their form, content, or appearance in any way, except, at Green Lights Partner's option, to add the phrase "Distributed at no cost by [Green Lights Partner], with permission of EPA's Green Lights Program," as well as Green Lights Partner's own logo, address, and phone number.

G  Recycled Paper.  Green Lights Partner agrees to use recycled paper for all of its reproductions of EPA-developed informational materials.

H  Distribution.  Green Lights Partner agrees to distribute EPA-developed informational materials to Green Lights Partner's employees and potential Green Lights Partners to promote and expand the use of energy-efficient lighting and membership in the Green Lights Program.

V. Criteria and Standards

A.  Each party to this agreement agrees to assume the good faith of the other party as a general principle for the Green Lights Program.

B  Both parties agree to notify each other if any problems arise and to work together to foster maximum public confidence in the Program.  Either party can terminate this agreement, without penalty, via 10 days' written notice to the other, and both will then cease to publicize Green Lights Partner's participation in the Green Lights Program.  Reasons that could cause EPA to terminate this agreement with Green Lights Partner include (but are not limited to):

- Partner's failure to provide annual report(s),
- Partner's failure to make adequate progress on lighting upgrades, to the point where it is evident that Partner will not be able to fulfill its upgrade commitments as stated in this MOU, and
- Partner's use of the Green Lights logo in an inappropriate manner.

Because public confidence in the credibility of Green Lights Partners' achievements is so important, EPA will make a best-faith effort to assist Green Lights Partner in meeting all of the goals of this MOU.

C.  Each party's commitments will be subject to any legal restrictions that may apply.

D  EPA agrees that information provided by Green Lights Partner to EPA will be treated pursuant to EPA's public information regulations under 40 Code of Federal Regulations, Part Two.

The undersigned hereby execute this Memorandum of Understanding on behalf of their parties.  This Memorandum takes effect when signed by both parties.

**For the U.S. Environmental Protection Agency (EPA):**

______________________  On: __________

Paul Stolpman, Director
Office of Atmospheric Programs

**For Sample Corporation :**

______________________  On: __________

______________________  __________

Name (Please Print)  Title

**Please return:**
(1) the signed MOU in its entirety, including attachments A & B, and (2) a camera-ready version of your organization's logo (EPA uses collages of company logos in Green Lights brochures, newsletters and advertisements.  Where a single organization is being focused on, that organization is given the opportunity to review and approve the logo use.)

to  Chief, Green Lights Branch; US Environmental Protection Agency (6202J); 401 M Street, SW; Washington, DC  20460

Thank You.  Welcome Aboard.

Appendix A: Sample Corporation    Please enclose the following information with the signed MOU

CEO/President's Name ______________________
Title ______________
Business Address ______________________
Business Telephone Number: ______________ Business Fax Number ______________

Please identify your Green Lights Implementation Director
Mr/Ms ______________ Title __________
Address ______________________
Phone ______________ Fax ______________

Please identify your Green Lights Communications Director
Mr/Ms ______________ Title __________
Address ______________________
Phone ______________ Fax ______________

What is the Nature of Organization's Business ? ______________ SIC Code ________
Approximate number of employees ________ Approximate number of facilities ______________
Corporate headquarters location ______________________

Approximate square footage:
  Office ______________
  Industrial/Manufacturing ______________
  Warehouses ______________
  Parking Garages ______________
  Retail ______________
  Food Sales & Service ______________
  Lodging (hotels, dormitories, etc.) ______________
  Education ______________
  Assembly (churches, auditoriums, etc.) ______________
  Laboratory ______________
  Other (please specify) ______________

Is the organization signing this MOU a component of another organization?  If so, please provide the name of the parent organization ______________
What is the first day of your organization's next fiscal year? __________
Who referred you to the Green Lights ? ______________________

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Appendix B: Definitions

1  Lighting includes all electrical and natural (daylight) lighting installations, including those found indoors and outdoors (facades, roadways, parking lots and garages, security/safety lighting, signage, etc.).

2. Eligible Facilities includes: (1) all domestic facilities that Green Lights Partner owns; (2) all domestic facilities it currently leases from other parties under agreements that expire more than five years after the date this agreement enters into force.  Space that Green Lights Partner leases under agreements terminating sooner than five years after the date this agreement enters into force are excluded from "eligible facilities;" and (3) all facilities where Green Lights Partner is the majority or controlling owner and that it currently leases to other parties (including facilities managed by property management firms).  Facilities that the Green Lights Partner reasonably anticipates selling sooner than five years from the date this agreement enters into force are excluded from "eligible facilities."  EPA encourages Green Lights Partner to include facilities outside the U.S.  New leases, as lessor and lessee, are discussed under "New Construction."

3. **Profitable.** Due to the relatively low risk involved in installing energy-efficient products and the tangible, but difficult to measure, benefits of enhanced quality, a project is defined as "profitable" when it provides an annualized internal rate of return that is equal to or greater than twenty percentage points, with an analysis term of at least 10 years. Projects that maximize energy savings while providing internal rates of return higher than twenty percentage points (the typical Green Lights upgrade yields an IRR of 20-40% post-tax) meet this criterion. EPA does not expect Green Lights partners to include measures within an upgrade project that are non cost-effective. EPA defines a non cost-effective measure as any individual measure within an upgrade project that has an internal rate of return of less than twelve percentage points. (Organizations in financial distress may qualify for a different criterion.)

4. **Lighting Quality.** Green Lights Partner and EPA agree that Green Lights Partner shall make all determinations affecting lighting quality and quantity, although Green Lights Partner may seek EPA's advice.

5. **No-Upgrade Facility.** After completing lighting surveys on all eligible facilities, Green Lights Partner need not upgrade those facilities that are identified as "no-upgrade facilities" according to one of the following three criteria.

a. If a facility's circumstances are such that, after a survey, no upgrade can be identified that would save energy while being profitable and meeting Green Lights Partner's lighting quality objectives, such a facility need not be upgraded. It has been the experience of Green Lights Partners that such circumstances are rare.

b. In a facility that Green Lights Partner leases from another party, the landlord must cooperate in the proposed installation program and in the division of financial benefits (e.g., by adjusting rents and/or other lease provisions) so that the upgrade project is profitable for Green Lights Partner. If, following good-faith efforts on the part of the Green Lights Partner, the landlord declines to cooperate, Green Lights Partner agrees to provide EPA with an opportunity to seek the landlord's cooperation through an EPA presentation on the benefits of the Green Lights Program. If the landlord still declines to cooperate, then such a facility need not be upgraded.

c. In a facility that Green Lights Partner leases to other parties, the tenant(s) must cooperate in the proposed installation program and in the division of financial benefits (e.g., by adjusting rents and/or other lease provisions) so that the upgrade project is profitable for Green Lights Partner. If, following good-faith efforts on the part of the Green Lights Partner, the tenant(s) refuse(s) to cooperate, Green Lights Partner agrees to provide EPA with an opportunity to seek the tenant(s)'s cooperation through an EPA presentation on the benefits of the Green Lights Program. If the tenant(s) still decline(s) to cooperate, then such a facility need not be upgraded.

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Appendix C: Green Lights publishes a monthly newsletter that gives news about events, new participants, media coverage, training opportunities, etc. We would be happy to send copies to 20 people in your organization, in addition to the Green Lights Implementation and Communications Directors. Our current participants usually designate as their 20 subscribers, managers and executives in: public affairs department, environment department, energy department, facilities management (regional managers or managers of major facilities), real estate department, strategic planning department and corporate finance department. Please provide names and addresses below. Thank you.

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## AGENCY'S NEW HIRING PLAN

Senator **BOND**. We need to go on to some other things, in the hopes that we will not have a fifth budget hearing this year. It is a high priority for me, and I assume that you have other things that you need to do rather than come back to join us again. But let me go to some actual appropriations issues.

About $800 million more was included for EPA than the original VA–HUD bill. I was interested to see in the April 5 issue of Inside EPA:

> This boost over a 5-month period may be hard for the Agency to digest, but Agency officials will want to spend as much as they can to prove it was needed all along.

Ms. **BROWNER**. Is there a name associated with that?

Senator **BOND**. I would like to find out who their sources are.

Ms. **BROWNER**. So would we.

Senator **BOND**. How many new hires does EPA plan as a result of the additional funds? What will these new hires cost EPA this year and next?

Ms. **BROWNER**. Remember we have had a hiring freeze now since July, and we have not lifted that freeze in its entirety. As of yet, we are still working out how to manage the hiring program. However, we are planning and we hope to hire 652. We can provide you with a list of how those would be allocated.

[The information follows:]

*Breakout of 652 new hires*

| | |
|---|---|
| Critical vacancy | 78 |
| Administrative reform | 24 |
| Stay-in-schools | 200 |
| Environmental priority: | |
| Air | 18 |
| Common sense initiative | 11 |
| Water quality | 33 |
| Enforcement | 7 |
| Waste water management | 9 |
| Drinking water | 43 |
| Enforcement | 7 |
| Groundwater protection | 8 |
| Drinking water reinvention | 20 |
| Hazardous waste | 30 |
| RCRA regulation reinvention | 19 |
| Pesticides | 20 |
| Research | 17 |
| Radiation | 1 |
| Multimedia | 39 |
| Criminal enforcement | 14 |
| American Indian environment | 7 |
| Toxic substances | 5 |
| General counsel | 10 |
| Integrated planning and budgeting | 48 |
| Regional planning, evaluation, and analysis | 3 |
| Superfund | 96 |
| Response | 34 |
| Legal enforcement | 28 |
| Total environmental priority hires | 350 |
| Total hires | 652 |

Senator BOND. One of the things that concerns me, obviously we have to look at what is likely to happen this year. In the recent fiscal year 1997 markup the House subcommittee, our counterpart, provided roughly a freeze for EPA payroll accounts. If that level were to be adopted, and obviously we have not dealt yet with our numbers, but that is what the House is proposing, would this level enable EPA to sustain the current staff plus the 652 hires?

Ms. BROWNER. Yes; it would. New hires is an important word. These are not new FTE's. This still keeps us below our FTE allocation. We could cover their salaries under the House number.

Senator BOND. But would you have to cut contracts to maintain those?

Ms. BROWNER. No.

Senator BOND. You would be able to maintain the contracts?

Ms. BROWNER. As we did last year when this process began, we looked seriously at where the Appropriations Committees might have been, where they were headed, and we put a hiring freeze in last year after the House's action. We are not going to hire up now to lay off later. We are not going to do that. We are being very careful as we manage this.

## ENFORCEMENT BUDGET

Senator BOND. Let me move to the enforcement budget. I note that the Agency's overall request for enforcement activities is below the fiscal year 1996 request level by some $47 million down to about $531 million. Is this representing a change in approach? Is this an admission by EPA that it can begin to reduce the duplication of State enforcement activities, or recognition that more than 80 percent of enforcement actions are now being taken by State agencies? What does this reflect, basically?

Mr. HANSEN. Mr. Chairman, it reflects a number of things. Mainly, it is reflecting a recognition that overall, even under the President's budget request, our staffing levels are not able to keep pace with inflation, and that we are seeing overall decreases. However, the area of emphasis from our perspective has been to ensure that our compliance people are going to be doing more than just taking enforcement actions. They are going to be the ones who are in the field, who are able to, in fact, provide either the necessary direct type of enforcement activity in coordination with States. They are also going to ensure that we accomplish the broader compliance assurance and compliance assistance activities. The emphasis is to be in the field and to be able to deliver direct activity.

I should say that also under statutory requirement, we do have a certain number that must be within the criminal enforcement activity. That number is increasing as provided in that statute in the 1997 budget.

## ENFORCEMENT ROLE OF THE ENVIRONMENTAL PROTECTION AGENCY

Senator BOND. Indiana's Environmental Commissioner, Kathy Prosser, recently stated,

> Given the growing maturity and ability of States, I think it is time for the U.S. EPA to reexamine its role in enforcement and compliance activities. Federal enforcement should be reserved for the most egregious violations for multistate corporations, multistate environmental problems, and after State action has been ineffec-

tive or not possible. The rest should be handled by the States. In almost every situation States can and should be in the lead."

Do you agree with that? What is your view on that?

Ms. BROWNER. We just spent a lot of time, 2 days, with the 50 State directors of the State environmental agencies, and this was obviously a topic of conversation. I think that Kathy Prosser's statement is the philosophy that we all adopt. In implementing that philosophy, it falls out on a very, very individual basis. It is important, for example, to know that 27 States today lack criminal investigative resources. Now, to suggest EPA should not be in the 27 States without criminal investigative resources does not make any sense to anybody. So what we are now doing literally on a State-by-State basis is working together to evaluate what are the resources, and what are the authorities that State has. We will evaluate the resources and authorities that we can bring to bear so that we are covering the full gamut of enforcement and compliance activity.

Twenty-three States' environmental budgets have decreased from fiscal year 1995–96. We have to be there to work with them, to fill in perhaps where they once were and now cannot be, and to continue to do those things that only we can do. For example, Kathy has spoken to me about some of the multistate issues.

For example, the case we had against GM, which affects every single State in the country, 400,000 cars will now be recalled. That is the kind of action we take which has benefits to the States.

## STATES ENVIRONMENTAL RESPONSIBILITIES

Senator BOND. Now, are you saying that some of the States because of cutbacks are no longer able to handle the environmental responsibilities?

Ms. BROWNER. In some instances, States are making some decisions that have to be made in conjunction with us to ensure that we are together doing the best possible job. The reality is, and the States will tell you this, we sat in the meeting and listened to the State directors tell us that their resources are being cut in many instances, or perhaps redirected.

The performance partnership agreements, that I think you have been very supportive of, we are now engaged in developing them with the States. We have entered into six of them now, and it is an opportunity beyond the grant side, which we have spent a lot of time talking about. It is an opportunity to really form an agreement, a partnership about what each of us will do within a particular State, and what we, the EPA will do, based on a variety of factors: expertise, resources, authority, a variety of factors. The bottom line is to avoid, as you point out and as Kathy Prosser pointed out and I absolutely agree with, duplication, and to ensure that we are acting in a complementary manner.

## ENVIRONMENTAL PROTECTION AGENCY RELATIONSHIP WITH STATES

Senator BOND. Several other comments made by State environmental directors in February's hearing, Mary Gade, the environmental director in Illinois, discussed how EPA used to review all the NPDES permits, but under the performance partnership will not review any. And I understand that James Strock of the California EPA has asked us to undertake a thorough reconsideration of the role of the EPA regions in returning many of the functions to the States along the lines of the NAPA recommendation. What do these initiatives indicate for the resource needs of the region, and where do you see the regional—how do you see, if any, the regional responsibilities changing?

Ms. BROWNER. It is interesting that when I came to this position it was clear to me we had to create a mechanism for dialoging with the State directors. EPA has a tremendous relationship, for example, with the water people in the States or the air people or the waste people. We needed to have a relationship with the top person who is responsible for all of these programs. So through our efforts, ECOS was created. ECOS is an organization for the State directors, and we meet with them very regularly now. I meet with them every year. We just completed that meeting.

Interestingly, in that meeting what we heard time in and time out is that the States would like to see more EPA resources going into the region. There are still many things, perhaps not oversight of NPDES permits in Illinois, I do not think we disagree with that, but there are still many things they believe that they need us to do that we can better do. It was interesting, literally person after person asking for more resources into our regional structure, not less, and these are State directors.

### PLACE-BASED INITIATIVES

Senator BOND. Place-based initiatives: Your budget requests some $16 million for some unspecified regional multimedia initiatives and $10 million for brand new sustainable development challenge grants. How does EPA go about determining which of these place-based initiatives deserves Federal funding?

Ms. BROWNER. The place-based activities are some of the most important and exciting work that we are doing. We work in conjunction with the States to determine the needs of an individual place. These are premised on the success we have had, for example, with the Chesapeake Bay. There is a situation where EPA is uniquely qualified to provide leadership because you have to bring together so many different jurisdictions. It is three States and the District of Columbia. That is a challenge, and EPA, as a Federal body, can best do that.

I do not think to suggest that these are boutiques really correct. It does not reflect the quality of the public health and environmental protections that can be achieved through place-based activities. We would be more than happy to provide you with place-based initiatives.

Senator BOND. If you would provide for the record how you are going to make those decisions.

Ms. BROWNER. Certainly.

[The information follows:]

### PLACE-BASED INITIATIVE METHODOLOGY

EPA's place-based initiatives are intended to foster implementation of integrated, geographic approaches to environmental protection that incorporate strong community involvement, and emphasize environmental quality and the associated improvements in economic viability and quality of life.

For example, criteria for selecting the Regional Geographic Initiatives, established in fiscal year 1994, emphasize a holistic and comprehensive approach to addressing high risk environmental problems that are less than national in scope, and cannot be adequately addressed by national environmental programs. These initiatives address places, in contrast to pollutants or programs; initiatives are based on a regional, state, and/or local strategic plan(s) and are usually risk-based; problems addressed and solutions developed are primarily multimedia in nature.

In some cases, an EPA regional office works directly with state, local, and/or tribal governments, or communities to develop a strategy for the management of a particular place which has been identified as a high priority due to potential risk. For example, Region VII developed a strategic plan with the Great Plains states' environmental commissioners and governors to form an initiative to protect vast lands and ecosystems in the Great Plains which were in danger after years of farming, grazing, and industrial use. In other cases, EPA may identify a problem through a local community which has not been adequately addressed by traditional state or national programs. The Office of the Administrator reviews all proposals submitted by the Regions to ensure they meet the selection criteria and distributes funds based on need, total available resources, and strength of the proposals.

The Sustainable Development Challenge Grant (SDCG) program is a new competitive grant program, designed to encourage community initiatives that achieve environmental quality with economic prosperity, through public and private involvement and investment. The SDCG program will provide seed funds to leverage significant public and private sector investment in sustainable communities. The program will first be implemented on a small scale in fiscal year 1996; EPA plans full implementation in fiscal year 1997. Projects will be selected competitively, based on criteria published in the *Federal Register* notice inviting proposals (and comments for fiscal year 1997 implementation). Program criteria include sustainability, community commitment and contribution, and measurable results. A national EPA panel will recommend projects to EPA senior officials for funding.

## WETLANDS VETO

Senator BOND. Finally, we had a lot of discussion after the bill passed last year about my effort to comply with the Vice President's request to eliminate duplication or overlap wherever we saw it. No Senator offered an amendment to strike or modify my little provision to eliminate the duplicating effort or responsibility of EPA on the wetlands veto. And we are going to have an opportunity to address that again, so let me state some propositions, and if you have disagreements with them or have different understandings, I would like to know about them.

The provision would not prevent the State Governor(s) under section 401 from withholding a water quality certification necessary for a permit, thus effectively vetoing a permit.

Ms. BROWNER. Excuse me, Mr. Chairman. Just so I understand what you are saying, you are describing your language?

Senator BOND. Yes; eliminating the duplication.

Ms. BROWNER. The language of last year, OK.

Senator BOND. It would not eliminate EPA's wetlands enforcement authority, EPA's responsibility to determine jurisdiction, EPA's responsibility to identify activities that are exempt, EPA's ability to elevate specific cases to a higher level of review within the Corps of Engineers, EPA's ability to approve a State assumption of the program, none of those things would be eliminated, would they? All those powers would remain under the proposal?

Ms. BROWNER. That was not our understanding of the language. If you are telling me that that is your understanding of the language, then I would ask you, with all due respect, what is it that the language seeks to eliminate?

Senator BOND. The duplicating responsibility on the permits, the going through the permit process, having the opportunity for the

EPA to go through the process and deny the permit, the dual decisional authority.

Ms. BROWNER. Well, I do not believe there is a duplication. I believe the corps and EPA have different responsibilities.

Senator BOND. If that is all you are saying, then we will again offer one that will eliminate—if you think there is none, then there will be no problem.

Ms. BROWNER. Then why not transfer all the responsibility to EPA? Why not transfer the corp's authority to EPA? If you believe there is a duplication, then EPA is the Agency.

Senator BOND. If you have a formal proposal, send it up. You go through all the deals, send it through OMB, and we will get it up here. But what I am concerned about is having two agencies each having the decisional authority.

Ms. BROWNER. It is two agencies with responsibilities that are different. In the case of EPA, we are responsible for water quality protections for the American people. Wetlands are an essential part of how we achieve water quality protection. They are nature's kidneys. To tell us and to tell the American people that EPA is going to protect your water quality, but they are going to do it with their hands tied behind their back, and we are going to deny them an important piece of the puzzle, an important piece of how we achieve water quality, it is not something we can agree to.

I do not believe there is duplication. I believe the work we do with the corps is in a partnership. It is complementary. I merely suggest to you that if you believe there is duplication, then it would help me to understand and perhaps resolve whatever differences we might have. I just want to have this conversation, if you could explain to me perhaps why moving it to EPA does not make more sense from your perspective.

Senator BOND. Right now, is it not true that the corps is bound by law to follow the 404(b)(1) environmental guidelines in their process?

Ms. BROWNER. Yes; that is accurate.

Senator BOND. And they are issued by EPA. They follow the guidelines?

Ms. BROWNER. Yes; we work together to develop the guidelines, and then the corps uses the guidelines. Your statement when you said my language, I do not want to put words in your mouth, but I thought you were saying the language I proposed would not have done the following things.

Senator BOND. That is correct.

Ms. BROWNER. OK. One of the things you said, as I heard you, and again, please correct me if I have heard wrong, is that your language would not have denied EPA the ability to challenge a corps decision.

Senator BOND. To raise it, to ask that the decision be moved to Washington.

Ms. BROWNER. Oh, I did not understand you to say that. I apologize.

## WETLANDS REVIEW

Senator BOND. You have the ability to elevate specific cases to a higher level of review within the corps. That is in a separate provision.

If you think there is a problem, you can ask the corps to move it up to a higher level. That is in a separate section of the law.

Ms. BROWNER. You are saying that——

Senator BOND. That was not affected in the proposal.

Ms. BROWNER. So your point is, now I think I am understanding this, is that EPA could raise it, but if the corps said we do not care what EPA has to say, EPA would have no authority to veto?

Senator BOND. You would have the authority to say OK, that decision has got to be made in Washington. That authority is still in the law. That was not affected by the provision. If you do not like what the corps regional provision has been, you would still have the right to send it to Washington, and I guarantee you that the corps is supposed to work for the same people that you work for. And as Governor, if I had somebody in my administration who did not follow the law, whether it was in agency A or agency B, I would get rid of them.

Now, you have the authority to raise any controversial decision to the corp's highest authority in Washington. And you say that is not enough.

Ms. BROWNER. No; it is not adequate. No; and the reason it is not enough is as Administrator of this country's environmental agency I have been tasked with water quality protection. To deny me the right to say no when I believe water quality is impacted is to limit my ability to achieve water quality protection.

With all due respect, I have really tried to understand what the problem is with the exercise of the EPA veto. This is an authority that has been used 11 times. It is not an authority that is used each and every day. The kind of situations where it has been used, it is hard for me, quite frankly, to understand the objection. To stop rock mining in the Florida everglades? Unfortunately, the Army Corps of Engineers at that point in time at the highest levels did not see an environmental problem. Fortunately, there was an EPA that saw a water quality and environmental problem. And I think that is true, and vast numbers of people would agree that is true in the 11 instances where the authority has been exercised.

So I could understand it, and there are legitimate questions that have been raised about the wetlands permitting processes. The administration has worked hard, for example, with the Natural Resources Conservation Service to address those questions and to streamline the decisionmaking. However, at the end of the day to take away EPA's ability to say no is to prevent us from doing our job in an intelligent manner. That is my personal belief.

## WETLANDS AUTHORITY UNDER THE NATURAL RESOURCES CONSERVATION SERVICES

Senator BOND. I am glad you brought up the wetlands authority under the Natural Resources Conservation Services [NRCS], because I first proposed getting rid of the four different agency authorities which a landowner had to go through to get a final decision. I proposed an amendment to have NRCS check with all of the other agencies and make a final decision. The administration vehemently opposed it in the previous Congress, and we lost that amendment, I guess getting about 40 or so votes, and 18 months later the administration looked at it and administratively made the same judgment that we had made and gave the NRCS the responsibility.

Ms. BROWNER. It was in August 1993 that the administration made that determination. It was something when I came to EPA, coming from a State where I had seen exactly what you are concerned about, we worked aggressively to resolve, and we did so in August 1993.

Senator BOND. Well, when we proposed it on the floor, strongly opposed it, and subsequently adopted it. I think that we do have a similar kind of overlap. I think that we can ensure that EPA's concerns about water quality are addressed, because I believe that all of the agencies in the administration have the same responsibility to carry out the laws and the mandates of the statute, and I am sure that we will have further opportunities to address that.

With that, seeing that there are no further questions here, do you have a final comment?

Ms. BROWNER. Yes, Mr. Chairman; just in closing I wanted to thank you for this opportunity to be here, and to also tell you that within the day you will receive our operating plan for fiscal year 1996. We have appreciated the work with your staff. We have done this in record time. We had hoped to bring it up this morning. We were doing some final copying things of that nature. You will have it.

## SUBMITTED QUESTIONS

Senator BOND. We look forward to seeing that, and we will submit further questions and probably not have to have a fifth hearing this year.

[The following questions were not asked at the hearing, but were submitted to the Agency for response subsequent to the hearing:]

# QUESTIONS SUBMITTED BY SENATOR BOND

## FY 1996 ADD-BACKS / OPERATING PLAN

Question: The final omnibus appropriations bill included $800 million for EPA than the original VA-HUD bill. How did the Agency decide to allocate the "add-back dollars" programmatically, such as enforcement activities, and how did risk-based analysis affect the decision-making?

Answer: The bulk of the "add-back dollars" were directed to programs consistent with directives contained in the report accompanying the omnibus bill. This includes $490 million for the Water Infrastructure Financing appropriation,$150 million for Superfund, and $40 million for enforcement activities. In addition, the Agency allocated sufficient resources to cover its existing, on-board workforce. Beyond that, allocations were made to programs consistent with the priorities established in the FY 1996 and FY 1997 President's Budget. Risk reduction was an important factor in setting these priorities.

## COST OF NEW HIRES

Question: How many new hires does EPA plan as a result of the additional funds, and what will these new hires cost EPA this year and next?

Answer: EPA's proposed Operating Plan anticipates that the Agency will hire 652 staff in FY 1996. We estimate these new hires would cost $10.6 million in FY 1996 and $41.7 million in FY 1997. Of our 652 hires, 200 would support the Agency's Student Employment Program.

## HOUSE SUBCOMMITTEEMARKUP AND EFFECTSON NEW HIRES

Question: In its recent FY97 mark-up, the House Subcommittee provided close to a freeze for EPA payroll accounts. Would this level enable EPA to sustain current staff, as well as new hires? Based on the House mark, is EPA reconsidering whether it should hire new staff?

Answer: Because the Full Committee mark is different than the House Subcommittee mark, we are currently analyzing the payroll impact for FY 1997. We do plan, however, to continue with our 1996 hiring plan, due to our need to support our environmental priorities. We believe that current attrition will allow us the flexibility for these hires.

## 1996 OBLIGATION RATE AND CARRYOVER

Question: The Agency has obligated only about $140 million of contract dollars in the EPM account. The 96 bill made available approximately $500 million for contracts in this account. How will the Agency manage obligating such a substantial amount of funds this late in the year? How much do you expect to carry over into FY97?

Answer: The Agency plans to obligate resources in 1996 in a prudent and responsible manner, consistent with applicable law, statute and direction from Congress made through the 1996 Appropriations act and report. Obligations will be made to meet the programmatic demands that went unaddressed during the first seven months of the fiscal year when the shutdown of the federal government and multiple continuing resolutions caused uncertainty for Agency operations.

Projecting with any precision the unobligated balances that will carry over into 1997 in EPM contracts is complex and highly variable. The difficulty in making this projection is caused by several factors, including the government shutdowns and multiple continuing resolutions, the lateness of the Agency receiving its 1996 appropriation, the fact that 1996 is the EPM account's first year as an EPA appropriation account, and the availability of the EPM appropriation for two years.

## INVESTMENTS AND DISINVESTMENTS IN THE EPM ACCOUNT

Question: EPM account -- The 1997 budget proposes an increase for EPM of approximately $210 million. However, including the working capital fund resources requested in the S&T account, the real increase (on an "apples-to-apples" basis) is closer to $250 million, or about 15 percent. Please describe the specific items (investments and disinvestments) which account for this increase.

Answer: The following items help to describe the EPM increase:

**EPM Investments (dollars in millions)**

| | |
|---|---|
| Air: | |
| Climate Change Action Plan | $50 |
| Montreal Protocol Fund | $7 |
| Water Quality: | |
| Water Quality Criteria, Standards | $4 |
| Wastewater Mgt &Technology | $14 |
| Effluent Guidelines | $2 |
| Working Capital Fund | $2 |
| Pesticides: | |
| Pesticide Registration | $4 |
| Pesticide Reregistration | $3 |
| Shift from PPI grants to HQ to Support States | $3 |
| Regional PPI FTE increase | $1 |
| WCF | $3 |
| Toxics: | |
| Environmental Justice to Empower Communities | $1 |
| Working Capital Fund | $2 |
| Hazardous Waste: | |
| Title III CAA Program Implementation | $2 |
| Tribal Assistance | $2 |
| Regulatory Reinvention | $3 |
| Common Sense Approach | $1 |
| Corrective Action | $4 |
| Working Capital Fund | $2 |
| Enforcement | $5 |
| Enforcement: | |
| Criminal Enforcement | $5 |
| Sector and Multimedia Compliance | $4 |
| Management and Support: | |
| Sustainable Development Grants | $10 |
| IRM Executive Steering Committee | $25 |
| Agency Rent and Direct Lease Cost | $7 |
| Multimedia: | |
| ETI - Extramural | $41 |

## INCREASE IN PAYROLL AND TRAVEL OVER 1996

Question: For payroll and travel costs, the EPM request includes an increase of approximately $23.5 million attributable to the proposed new hires, and $84 million to sustain existing FTE, for a total of $107.5 million. This is an increase of 11% over the 1996 level. Please explain why such a large increase is required.

Answer: Our projected payroll and travel needs for FY 1997, based on our most current payroll and COLA information, are as follows:

| | In Millions |
|---|---:|
| Payroll for Current On-Boards | $717 |
| COLA/Locality Pay (3%) | $16 |
| Enrichment /Benefits | $43 |
| Discretionary | $10 |
| New Hires for FY 1996 | $25 |
| New Hires for FY 1997 | $12 |
| Travel for FY 1997 | $27 |
| Total PC&B and Travel for FY 1997 | $849 |

## PROJECT XL

QUESTION: Project XL - How many participants are there in this program to date? How does this compare with EPA's original expectations to approve 50 projects? What has been learned to date?

ANSWER: In the May 23, 1995, *Federal Register* publication "EPA's Regulatory Reinvention (XL) Pilot Projects," the Agency announced its intention to select approximately 50 pilot projects within the program's first two years. The Agency expectation was that the number of proposals submitted would increase as awareness of the XL program grows, and as project agreements are signed and the pilots are implemented. That expectation is being met.

To date, of the 47 proposals that EPA has received, the Agency has accepted 14 and is currently working with the proponents to negotiate the Final Project Agreements--after which the projects will be implemented. Four proponents have withdrawn their proposals and EPA has rejected seven submissions. EPA staff are currently reviewing fourteen proposals, and are awaiting additional information on several others.

The projects selected to date will test innovative strategies for achieving environmental results. These strategies include processes, technologies, and management practices ranging from reducing unregulated emissions in production processes which will offset less effective, required emissions controls to implementing an advanced, third-party certified ISO 14001 Environmental Management System and building alternatives to record keeping, reporting, and procedural requirements. Each strategy being tested can conceivably be incorporated into the Agency's programs or in other industries, or in other facilities in the same industry.

## COMPARATIVE RISK ASSESSMENT UPDATE

Question: The Senate report accompanying the original FY96 VA-HUD bill said "the Committee expects the fiscal year 1997 budget submission to be based on a thorough comparative risk assessment of EPA activities." A comparative risk assessment is much more than simply saying EPA is increasing funds for microbial research and PM-10, because they represent significant risks.

-- Please explain what EPA has done to meet the Committee's directive of conducting a comparative risk assessment of EPA's activities and can you provide the comparative risk assessment to us?

Answer: The Agency developed the FY 1997 budget before the FY 1996 appropriation was enacted with its accompanying report language. The Agency, however, has taken steps to address risk assessment within its activities. On October 35, 1995, Deputy Administrator Fred Hansen requested the Science Advisory Board to update the 1990 report entitled "Reducing Risk: Setting Priorities and Strategies for Environmental Protection." In addition to the update, the SAB plans to provide its report to the Administrator and the public late next Spring (1997). Once this update is available, we plan to utilize this work as input to future formulation.

Attached is the project plan schedule the Science Advisory Board has developed to prepare a risk assessment framework.

### SAB Integrated Risk Project:
### Project Schedule

Feb 29, 1996 Steering Committee Discussion with Executive Committee
(Held) --discussion of final charge and project scope

Mar 13 Working Meeting of Project Subcommittee Chairs (#1a)
(Held) (non-FACA meeting to develop recommendations for Steering Committee)
--agree on project schedule
--discuss terminology and approaches
--make recommendations to Steering Committee on project design

Mar 14-15 Ecological Risk Subcommittee Meeting (#1)
(Held) --discussion of ecological resources at risk
--discussion of ecological stressors/problems
--discussion of ranking factors

Apr 29 Steering Committee Conference Call (#1b)
(Held) --discuss recommendations of working group
--finalize instructions to subcommittees

May 21-23 Ecological Risk Subcommittee Meeting (#2)
(Held) --continue discussion of national-scale relative risk ranking
--discussion of regional/subregional scale issues

Jun 13-14 Human Exposure & Health Subcommittee Meeting (#1)

(Held) --discussion of conceptual approaches for assessing relative risks
--discussion of ranking factors (including combined cancer

& noncancer rankings)
--formation of teams to pilot different approaches

Jun 26-27 (Held) Reducing Risk Options Subcommittee (#1)
--discussion of risk reduction approaches and metrics for risk reduction optimization and evaluation
--working group assignments to pilot stressor, location, and media-focused approaches

Jul 16-17 Steering Committee Meeting (#2)
--status report from subcommittees
--discuss commonalities for ranking health and eco risks
--begin development of conceptual framework for integrating risks, economic analysis, and quality of life issues

Jul 19 Valuation Subcommittee (#1)
--define the issues to be addressed
--identify opportunities for improved valuation (including methodological and conceptual issues)
--assign issues for further development

Aug/Sept TBA Economic Analysis Subcommittee (#1)
--discuss economic analysis tools to be applied
--define the nature of information needed from other subcommittees
--discuss relationship of cost/benefit work to the work of the Valuation Subcommittee

Sept TBA Human Exposure & Health Subcommittee Meeting (#2)
(With liaisons from RROS, ERS, and EAS)
--discuss risk categories and ranking approaches
--combined cancer/noncancer risk ranking
--discussion of probable risk reduction options (input to RROS)
--discussion of non-monetized human health benefits (input to EAS)

Sept TBA Valuation Subcommittee (#2)

Sept 10-12 Risk Reduction Options Subcommittee (#2)
(With liaisons from HEHS, ERS, and EAS)
--identify risk reduction options for the top-ranked eco and health risks
--apply risk optimization approaches for a suite of risks
--select options for cost/benefit analysis (input to EAS)
--writing assignments on promising options

Sep/Oct Ecological Risk Subcommittee Meeting (#3)
(With liaisons from RROS, HEHS, and EAS)
--discussion of draft risk characterization issue papers
--final national-scale relative risk ranking
--discussion of regional/subregional scale issues
--initial identification of risk reduction options (input to RROS)
--discussion of non-monetized eco benefits (input to EAS)

Oct/Nov Economic Analysis Subcommittee (#2)
(With liaisons from HEHS, ERS, and RROS)
--analyze costs/benefits of various risk reduction options
--monetized and non-monetized benefits

Nov Steering Committee Meeting (#3)
(3 days) (With additional subcommittee members, as needed)
--apply the conceptual framework for integrating risks, economic analysis, and quality of life issues, using output from the subcommittees
--agree on final report organization and bottom lines
--writing assignments

Oct-Dec Final meetings of all subcommittees, as needed, to complete recommendations and contributions to the Steering Committee
Ecological Risk Subcommittee (#3)
Human Exposure and Health Subcommittee (#3)
Risk Reduction Options Subcommittee (#3)
Valuation Subcommittee (#3)

Jan/Feb Steering Committee Meeting (#4)
--review/approve final report that synthesizes findings of subcommittees and lays out the integrated framework

Feb/Mar External Peer Review

Spring Final report delivered to EC for discussion/approval

Transmittal to Administrator and public

## PRIORITY TO STATE GOVERNMENTS IN THE OUTYEARS

Question: In the FY97 request, Superfund cleanups and state grants are held almost constant at the FY96 level, and in the outyears, the President's budget would hold Superfund at a freeze while other EPA programs -- such as regulatory, enforcement and research programs -- would increase up until 2000. Does this indicate these activities are relatively lower priorities? Shouldn't states be afforded a relatively high priority as EPA turns more responsibility over to the states?

Answer: Level funding, in an era of declining resources, is a clear signal of support for these activities. Since there is not a direct relationship between funding and priority (investment varies by type of activity), it would be a mistake to assume that Superfund cleanups or state grants are of low priority.

For example, the Agency went to considerable effort to ensure the full and continuous funding of state environmental programs during the recent shutdowns and budget uncertainties. Predictability of funding and consistency are as important to these efforts as are funding increases, especially during times of funding uncertainty. Since successful state environmental programs are essential to EPA's success, we expect to continue giving high priority to stable funding for the operating program grants to the states.

At the same time, many EPA programs and services are not delegable to the states, and in fact, are activities upon which the states depend heavily for their success. These include many of the aforementioned standard-setting, enforcement, and research functions which are done most effectively at the federal level. Even where the states have or could assume delegation, the states are asking that EPA invest more heavily in technical support, training, program evaluation and applied science to ensure a solid national framework and to support state programs where they need assistance.

## EPM/S&T Increases

Question: The FY 97 budget includes an increase of 18% above the enacted level for the Science & Technology Account and an increase of 13% in the Environmental Programs and Management Account. What accounts for such large increases, and how much is associated with new staff hires?

Answer: Please see the attached charts depicting increases for the FY 1997 President's Budget. In EPM, $37 million are attributable to new hires in both FY 1996 and 1997, and $5 million are attributable in S&T. The following charts explain additional increases.

## FY 1997 President's Budget
## Increases over the FY 1996 Operating Plan

**(dollars in millions)**

### EPM

| Program | Increment |
|---|---|
| Climate Change Action Plan | $50 |
| ETI | $43 |
| Montreal Protocol | $7 |
| Water Quality Criteria Standards | $4 |
| Wastewater Mgmt & Technology | $14 |
| Effluent Guidelines | $2 |
| Pesticide Registration | $4 |
| Pesticide Reregistration | $3 |
| Shift from PPI grants to HQ to Support States | $3 |
| Regional PPI FTE increase | $1 |
| WCF (for Water, Pesticides, Toxics and Haz Waste) | $10 |
| Environmental Justice to Empower Communities | $1 |
| Title III CAA Program Implementation | $2 |
| Tribal Assistance | $2 |
| Regulatory Reinvention | $3 |
| Haz Waste Common Sense Approach | $1 |
| Corrective Action | $4 |
| Haz Waste Enforcement | $5 |
| Criminal Enforcement | $5 |
| Sector and Multimedia Compliance | $4 |
| Sustainable Development Grants | $10 |
| IRM Steering Committee | $25 |
| Agency Rent and Direct Lease Cost | $7 |
| **Total** | **$210** |

### S&T

| Program | Increment |
|---|---|
| Ecosystem Protection | $22 |
| PM-10 | $5 |
| Microbial/Disinfection | $4 |
| Mobile Source Air Pollution | $7 |
| Climate Change Action Plan | $8 |
| ETI | $17 |
| Superfund Research | $22 |
| Endocrine Disrupters | $2 |
| Fellowships | $8 |
| Pesticides | $1 |
| Technical Enforcement Support | $1 |
| Working Capital Fund | $33 |
| Payroll/Travel (not incl. SF Research) | $23 |
| **Total** | **$153** |

Portions of the above EPM and S&T increases are attributable to PC&B costs for new hires.

## DISINVESTMENTS

Question: "Disinvestments." Which programs are proposed for "disinvestments" in FY97 -- not including those which would be reduced in any case because of the completion of a particular activity, such as a rulemaking? How were decisions made to disinvest in a particular program?

Answer: At the time the Administration made decisions on FY 1997, the Agency's FY 1996 appropriations had not passed Congress. Disinvestment decisions were made using the FY 1996 President's Budget as the base. Therefore, the programmatic disinvestment amounts reflected below are redirections from the FY 1996 President's Budget, and do not necessarily reflect disinvestments from the FY 1996 enacted levels. For several key programs, including Superfund, the Clean Water SRF, the Montreal Protocol, and the Environmental Technology Initiative -- the FY 1997 Request represents a reduction in the size of the increase (relative to the increase requested in the FY 1996 Budget), rather than an absolute reduction to the FY 1995 levels:

| | |
|---|---|
| Operating Programs: | |
| PCB Risk Reduction | -$0.4 |
| Environmental Preferable Products | -$1.0 |
| OIG Management | -$2.3 |
| Montreal Protocol | -$5.0 |
| Global Change Research | -$9.0 |
| Troposheric Ozone | -$13.1 |
| ETI | -$52.0 |
| Trust Fund: | |
| Superfund Research | -$16.8 |
| Superfund | -$166.1 |
| State Grants/Loans: | |
| Construction Grant Closeout | -$2.2 |
| Water Quality Cooperative Agreements | -$2.5 |
| Air State Grants | -$16.0 |
| Clean Water SRF | -$237.0 |

As the Agency formulated the FY 1997 Budget, each office determined the most critical needs that support the goals and direction of the program . Decisions to disinvest focused on program priorities resulting from reinvention efforts and a redirection from lower to higher risk reduction, other funding sources, and the Agency's movement to allow the States, Tribes, or other partners to take the lead for a particular activity.

## NEW REMEDIAL ACTION FUND-LEAD STARTS IN FY 1997, AND WALLINGTON NJ SITE

Question: How many sites do you estimate will be ready-to-go to construction (new remedial action fund lead starts) in FY97 and would receive cleanup funding under your 97 budget request? How many sites would not be funded? Will the Wallington, NJ site receive cleanup funding in FY 97?

Answer: The FY 97 President's Budget request for long-term actions includes fund-lead activities at twenty-one new start response actions in addition to many of Superfund's ongoing remedial actions, pre-authorized (e.g. mixed funding), and orphan share projects. The number of new starts is an estimate for planning purposes. The exact forecasting of future number and cost of Superfund cleanup projects is very difficult for a number of reasons:

- Emergencies and unexpected events take place;
- Site characteristics change with time in an uncontrolled physical environment which may result in delays and cost increases;
- Potentially Responsible Party (PRP) negotiations may fail at sites which currently have an enforcement lead requiring Superfund construction dollars;
- Ability or willingness of States to provide cost share may affect Superfund's ability to begin cleanups or;
- Community may question remediation mechanism.

It is difficult to project how many sites will not get funded next fiscal year, including the Wallington NJ site (Industrial Latex). The current prioritized list of projects only included new start construction activities scheduled to begin this fiscal year. It is a snapshot of funding needs and continues to evolve as supplementary site information becomes available. In addition, the Regions are beginning to determine new start construction activities readiness for FY 97. The program's Prioritization Panel is scheduled to reconvene before the end of this fiscal year to rank these projects. Currently, it is uncertain how many of these sites will rank high. It is conceivable that some of the new projects will rank above some of the sites currently on the list.

## 650 SUPERFUND SITES CONSTRUCTED BY 2000

Question: Will your budget request for FY97 and the outyears -- for which a freeze is assumed -- enable EPA to meet its stated goal of 650 construction completes by the year 2000? By the year 2000, what would be the backlog of sites "ready to go" to construction, but unfunded due to the proposed budget?

Answer: The Superfund program has 355 construction completions to date, and a projected 395 by the end of FY96. The Agency's goal is to reach 650 construction completions by the end of year 2000. Under the current statutory requirements and requested budget, projected forward through the year 2000, the Superfund program should be able to obtain the 650 construction completions goal.

The Agency does not have an estimate for a project backlog of sites "ready to go" in out years. The level of participation of potentially responsible parties, the success of administrative reforms, and innovations in site cleanup technologies compound the difficulty of making a meaningful outyear estimate. The Superfund program's goal is to expeditiously initiate all construction projects posing the greatest risk to human health and the environment as soon as they are "ready to go" and funds are available.

## SUPERFUND BUDGET ALLOCATIONS

Question: How does the EPA plan to apportion its Superfund budget to the following activities:

- EPA staff
- ATSDR, NIEHS (research and worker training), the Justice Department and other Federal agencies
- "Assessment" and "Remedial Actions" activities, to
  - a) RI/FS, RD and RA activities
  - b) Corps of Engineers, States and contractors (ERR's, ROC's, RAC's , ARC's START, etc.)

- Other "activities"

Answer: The FY 97 President's budget requests funding for the following activities:

- Staffing -- A total of $251.3 million is included in the FY 97 President's Budget to fund EPA staff (salaries and travel) of the Superfund program. Funding for the staff of the Inspector General is not included.

A break out of the Agency's Superfund budget is as follows (including salaries and travel costs):

- Other Federal Agencies --
  - ATSDR - $58 million
  - NIEHS - $48.5 million ($21.1 for Worker Safety and $27.4 for Basic Research).
  - Department of Justice - $30.9 million
  - $9.5 million for the other Federal agencies that support Superfund response activities including: the United States Coast Guard , the National Oceanic and Atmospheric Administration, the Department of the Interior, the Federal Emergency Management Agency and the Occupational Safety and Health Administration.

- The Agency requested $903.3 million for the response program which includes:
  - $105.0 million for site assessment, which includes preliminary site assessment and Remedial Investigation/Feasibility Study.
  - $355.8 million for long term actions which includes Remedial Design and Remedial Actions and funding to the Corps of Engineers and Remedial Action Contracts (RAC) to support these activities.
  - $80.8 million to improve the efficiency and effectiveness of the Nation's overall hazardous waste response capability in State and Tribal government programs. These funds also include community involvement, environmental justice and outreach activities and Brownfields.
  - $250.4 million for early actions which includes removal activities to stabilize, contain and clean up of hazardous materials on sites. These funds include funding to the Emergency and Rapid Response Services (ERRS) contract and the START contract.
  - $22.1 million for oversight of other Federal agencies' cleanup efforts. These funds include funding to the ROC contract which supports this activity
  - $88.9 million for technology innovation activities emergency preparedness and prevention activities, management support of cleanup contracts, working capital fund and management and support functions.

- The Agency requested $171.2 million for the enforcement-lead program which includes:
  - $24.9 million to encourage private responsible party (PRP) responses, including settlement negotiations or where these fail through enforcement actions.
  - $29.1 million for Enforcement Fairness, Agency efforts to increase fairness, reduce transaction costs and promote economic redevelopment.
  - $10.7 million for cost recovery efforts.
  - $7.8 million for Federal facilities enforcement.

- The Agency requested $118.9 million for management and support activities (excluding the Office of the Inspector General), including:
    - $1.1 million for planning and evaluation, including environmental benefits analyses and cost modeling.
    - $2.8 million to provide legal advice and counsel to the rule making and policy making activities of the program.
    - $43.1 million to provide the management services and operations that enable the Superfund program to achieve its mission, including fiscal management and control functions; payroll, contract and grant activities.
    - $68.8 million for mandatory expenses (including rent/direct lease and security) and support services (including telephones, motor pool, utilities).

### INCREASED SPENDING ON ACTUAL SUPERFUND CLEANUP

Question: Given the limitations imposed by this subcommittee's budget allocation what actions can and should our subcommittee take to assure that a greater percentage of Superfund dollars are spent on actual cleanup (contractor-led FA/FA, RD/RA and removal activities) with appropriate EPA management and oversight?

Answer: The primary focus of the Agency's Superfund program is the cleanup of abandoned waste sites, whether EPA or private parties fund the action. To maximize the number of cleanups that can be undertaken or overseen by EPA, the Agency is emphasizes the use of enforcement authorities to leverage private party participation. As a result, the Agency has seen private party participation rates increase from less than 30% in the late 1980s to over 70% currently. The Agency also continues to make every effort to streamline and accelerate the entire Superfund process through the development and implementation of presumptive remedies, national cleanup standards, and the Superfund Accelerated Cleanup Model (SACM).

The Agency continues to realign its resources to activities which will meet these primary Superfund goals. Most recently, the Agency completed a Base Review which refocused resources on the program's primary priorities and goals. These included the following:

- Cleanup Pace: continue efforts to achieve cleanup pace of 650 cleanups by the year 2000.

- Worse Sites First: focus on "worse sites first" and use removal authorities to quickly mitigate immediate threats to human health and the environment.

- Enforcement Fairness: while striving to maximize PRP participation, seek equitable treatment to all parties, especially small volume contributors, emphasize reduced transaction costs by PRPs and use allocation and mixed funding where possible.

- Contract and Information Management: make every effort to ensure the most efficient and cost effective utilization of contractor resources as well as the credibility, reliability, and accessibility of Superfund data.

- State and Community Involvement: continue effort so support the development of state and tribal capabilities and expand state and community participation in cleanup activities.

## TIME LINE OF FUNDING OF CLEANUP ACTIVITIES COMPARED TO ENACTMENT OF APPROPRIATIONS

Question: It appears that although the appropriations legislation for the remainder of 1996 was enacted in late April, it may be June before the money starts flowing to actual cleanup activities. How quickly did the EPA put an operations plan in place following the appropriation's approval. Was the agency able to effect any real cleanup progress during May?

Answer: The Agency received its appropriation on April 26 and submitted its FY 1996 Operating Plan for Congressional approval on June 7. EPA issued money under the numerous continuing resolutions to support emergencies, mixed funding, and ongoing response actions at Superfund sites. In late April, the Agency issued approximately $61 million for new start projects (removal and remedial action). The Agency also initiated actual cleanup at two sites and completed cleanup at one site in the month of May.

## ERODING ENGINEERING AND CONSTRUCTION SUPPORT BASE

Question: Administrator Browner, you have noted from time to time that contractor support for the Superfund program is essential for its success. From what I am hearing, however, the aggregate capacity in the engineering and construction support base is eroding even as we speak.

Answer: Since 1988, the Alternative Remedial Contracting Strategy (ARCS) contracts have been EPA's primary contracts for engineering and construction support. As the ARCS contracts draw close to completion they are being replaced by the Response Action Contracts (RACs). The new RAC contracts are the next generation of long-term clean-up contracts placed in the Regions to provide the necessary engineering and construction support needed to implement the Superfund program. Therefore, the ARCS support base has not eroded but is being utilized to the fullest extent practical and replaced by RACs. To-date, competition for the RACs has indicated a continued interest by many firms for continuing work with Superfund. In addition, the U.S. Corps of Engineers also maintains engineering and construction contracts which are used to support EPA's Superfund mission.

## SUPERFUND CONTRACTOR READINESS AND CAPACITY

Question: Given the uncertain funding situation under which the EPA operated from October 1995 until late April 1996, what has the Agency done to assure that your contractor capacity is in place and at an appropriate state of readiness? The new construction season is upon us. Are the "best of class" remediation contractors available to conduct cleanups, or are they giving up on EPA remediation and committing to cleanup contracts with DOD, DOE or the private sector? What kind of contracting capacity does the agency need to have in place in order to proceed with Superfund cleanups this year and next. What steps are you talking to assure that EPA has neither too much nor too little capacity?

Answer: New contracts supporting the Superfund program are procured under the Superfund Long-Term Contracting Strategy (LTCS). This strategy was put in place to guide the Agency in mapping out the types and numbers of contracts the Agency would need to accomplish Superfund cleanups. The Agency has adequate contract capacity to proceed with cleanups for the foreseeable future. Under the LTCS, contracts have been sized according to the needs of each geographical and/or program area and flexibility has been built in to use other contracts should an imbalance in capacity occur in one area. Furthermore, the Agency tracks available contract capacity and would procure additional contracts if there was insufficient capacity. The Agency has looked at the structure of new procurements to ensure that they have adequate flexibility to accommodate changes in funding levels or workload. As a result, for example, in some contracts the base amount has been adjusted and capacity shifted to option periods. There continues to be plenty of competition from firms with the technical knowledge and expertise to support the Superfund program. In addition, the U.S. Corps of Engineers also maintains engineering and construction contracts which are used to support EPA's Superfund mission.

## FINANCIAL AND PERSONAL LOSSES OF SUPERFUND CONTRACTORS

Question: Do you have an estimate of the financial losses and personnel losses incurred by Superfund contractors as a result of the lack of a year long appropriation?

Answer: The Agency does not have an estimate of the financial losses and personnel losses incurred by Superfund contractors as a result of the lack of a year long appropriation. The Agency has received approximately 30 claims as a result of the four day Superfund shutdown. However, some of these claims do not include cost estimates. In addition, the claims only address losses the contractors consider appropriate under the terms and conditions of their contracts with the Agency.

## ADMINISTRATIVE ACTION TO TARGET RESOURCES TO HIGHEST SUPERFUND PRIORITIES

Question: Given the interruption to scheduled cleanup activities and the scope of work assignments this year, what administrative action are you taking to target resources and industry capacity to the highest priorities? Are you actively consulting with the cleanup contracting community as you develop and implement these actions?

Answer: The Agency has taken several steps to ensure that contractor capacity is available for the highest priorities. During FY 1996, the Agency continued to compete and award new contracts consistent with the Superfund Long-Term Contracting Strategy. This ensured that contractor capacity would be available to support emergency response, remedial site cleanup, site assessment and analytical support activities. The structure of the contracts are such that small bases are available with multiple option quantities to optimize resources and allow maximum flexibility in funding priority activities.

The Agency also established the Superfund Prioritization Panel to target resources to the highest priority projects. This panel reviews remedial and large removal actions to make risk based decisions on a national level regarding the relative priority of new projects. This effort provides the basis for response action funding decisions.

While the Agency does consult and provide information to the cleanup contracting community on a broad range of issues, contractors are not consulted as part of prioritizing work or making project funding decisions. The Agency has an open dialogue with the Hazardous Waste Action Coalition (HWAC) which promotes a bilateral flow of information between the EPA and the cleanup contracting community. This ensures that each participant receives useful and timely feedback, and EPA is able to address major concerns or respond to positive suggestions from the contracting community.

## STRATEGIES FOR MORE SUPERFUND CLEANUP PER DOLLARS SPENT

Question: Are there contracting strategies or organizational alternatives that will allow EPA to accomplish more cleanups per dollar spent? For example: (1) While EPA has generally favored cost-plus contracting, are there instances in which firm fixed price contracting provides economies or efficiencies? (2) Are there internal savings and efficiencies to be gained in deobligating funds from previous EPA cleanup contracts, such as ARCS to the next-generation cleanup contracts, such as RACs?

Answer: The Agency's new Response Action Contracts (RACs) contain a completion form element for work assignments in which the contractor is required to complete and deliver a specified end product within the estimated cost of the work assignment as a condition for fee payment. If the contractor cannot complete the product within the cost estimate, the Agency may provide the contractor with additional funds to complete the work but the fee remains as originally negotiated. This approach gives the contractor an incentive to complete the work within or below the estimated cost. The Agency will continue to use fixed price subcontracts for cleanup projects at Superfund sites under the ARCS and RACs, as appropriate.

The Agency continues to fund the Superfund Contractor Laboratory Program on a firm fixed price basis to over 20 laboratories nationwide. These are the largest pool of firm-fixed price contracts in EPA.

During the transition from ARCS to RACs, EPA seeks the most logical breaking point to transition work from one contractor to another. As work at a site is moved from ARCS to RACs, funds will be deobligated from the ARCS contract in order to continue work at the site under RACs. This will ensure that only the funding needed for work assignment and contract closeout will remain under ARCS and remaining funds will be transferred to RACs. This is sound contract management and a responsible use of the funds in these contracts.

## GRANT TO NAPA

Question: Ms. Browner, as you know, this subcommittee supports the efforts by NAPA to follow-up on its earlier report, and work with the Center for Strategic & International Studies' "Enterprise for the Environment" initiative to develop legislative reform proposals. Report language accompanying H.R.3019, the omnibus appropriations bill, directed EPA to make a grant to NAPA for this purpose. Has such a grant been made, and if not when will it be made? Does EPA support this effort?

Answer: EPA expects to have a cooperative agreement awarded to NAPA shortly. Our staff have had several productive discussions with NAPA staff on the scope of work. NAPA has submitted a proposal that the Agency finds acceptable and NAPA indicates that it plans to submit the formal application for assistance before the end of June. Award of the cooperative agreement should be completed within two to four weeks after receipt of a complete application.

## EPA CONCERNS WITH THE CSIS PROJECT

Question: Deputy Administrator Fred Hansen is serving on the CSIS project board. Rumors have it that EPA may be reconsidering its involvement in the CSIS project. Does EPA have concerns with this project, and if so can you elaborate on them? Does EPA support the CSIS effort?

Answer: We support the CSIS effort as a way of getting broad-based stakeholder input and analysis on how the country can produce ever-improving environmental results at lower cost. These goals are consistent with the Administration's reinvention efforts and the recommendations of the President's Council on Sustainable Development. However, for the CSIS initiative to effectively contribute to these goals, it must have a broad-based group of stakeholders, it must employ processes that prevent the voices of any one set of interests from dominating, and there must be enough central staff support to provide a balanced, factual underpinning for identifying problems and developing proposals for reforms. Based on Mr. Ruckelshaus' responsiveness to the general advice in this regard that we and others have given him, we have no reason to reconsider our support for the initiative.

## OPINION ON NEED FOR FUNDAMENTAL STATUTORY REFORM

Question: In the February hearing, we discussed the need to make comprehensive changes to the way EPA operates. Bill Ruckelshaus asserted that "a remedy that does not include fundamental statutory reform, will miss the mark." Do you agree?

Answer: EPA believes that real improvements can be made in our operations without fundamentally reforming our statutory framework. The nature and degree of operating changes desired will dictate the nature and degree of statutory reform necessary to support it. The CSIS initiative may be a good forum for testing the extent to which there is consensus among various interests on the changes that the country should make in its environmental protection system, including but not limited to the way EPA operates. Assuming some agreement on that question, we would expect that the issue of whether fundamental statutory reform would be required to support those changes would then be an integral part of the the CSIS agenda.

## ACCOMPLISHMENTS AND STATUS OF THE "STATUTORY INTEGRATION PROJECT"

Question: In response to this Subcommittee's directive of more than a year ago to develop a legislative proposal to respond to NAPA's recommendations, EPA recently created a "statutory integration project." What has this project accomplished to date, and when will a proposal be presented?

Answer: Consistent with the Subcommittee's request, the staff team assigned to the Statutory Integration Project has initiated several activities to identify where statutory integration would most improve results and lower costs and by what statutory mechanisms that integration might be achieved. For example, the team is currently consulting with experts and stakeholders on where integration is most needed and the changes necessary to promote it. This input and the results of other analyses will be used to identify and assess a range of alternatives for improving integration across statutes, including the alternative of a unified environmental statute.

Given EPA's and the Subcommittee's support for the CSIS Enterprise for the Environment initiative, we think it would be inappropriate for the Agency to present legislative proposals that might appear to pre-empt or prejudge the outcome of the CSIS stakeholder process. The Statutory Integration Project will coordinate its work with CSIS and make interim products available to CSIS, the Subcommittee, and others, but we think the Agency should await the results of the CSIS process before determining the form and content of any final product from the project. We would be happy to have the project team brief Subcommittee staff on the project team's activities to date.

## STATE CONCERNS WITH PERFORMANCE PARTNERSHIPS

Question: Turning Responsibility to the States. At our February hearing on NAPA, Former EPA Administrator Bill Ruckelshaus said:

> "One of the reasons the authority was centralized in Washington in the first place was because the states who were solely responsible for regulating the environment prior to the 1970's, prior to the creation of EPA, were competing so fiercely for the location of industry within their borders that they really weren't all that effective in regulating activity as it related to protecting the environment."

Today most states are quite effective in implementing environmental protection programs. EPA claims to support NAPA's recommendation to devolve more responsibility to the states, yet in reality we're not seeing changes in the agency's day-to-day operations.

Reports are that EPA's draft guidance for the so-called performance partnership with the states is overly prescriptive and would continue to micro manage the states. Recently released draft guidance from EPA on the performance agreements was labeled as "unsatisfactory" by state officials.,

State sources have said the proposed guidance "does not go far enough in admonishing EPA regions and program offices to embrace the new spirit of reduced oversight when negotiating annual performance agreements, and needs to contain clearer mandates for change."

How are these concerns being addressed?

Answer: The National Environmental Performance Partnership System (NEPPS) and the funding flexibility afforded through the Performance Partnership Grants (PPGs) offer important new approaches and tools to Regional and State managers of environmental programs. At our recent (3rd annual) meeting with the state environmental commissioners, states expressed strong support for the Performance Partnership system and commended EPA for significant changes in the Agency's operations in just one year. State and EPA officials also discussed the need for further significant change to assure full implementation of NEPPS by both EPA and the States.

A recent GAO report looking at oversight reform (one element of NEPPS) in Region 5 documents a 50% reduction in real-time permit review in NPDES and dramatic improvements in RCRA due to extensive effort by joint state/EPA quality action teams to re-engineer program processes to make better use of respective agencies' expertise and resources. Recent testimony to the Committee by Mary Gade (IL), Chuck Williams (MN), and Christophe Tulou (DE), note that the new approach is, in fact, bringing about important changes in how EPA and the states plan their work, set their priorities, measure progress, and explain that progress to the American people.

As of the end of May 1996 (one year from the establishment of NEPPS), 6 states have signed agreements, 34 states have tentatively expressed intent to participate in NEPPS and 24 are expecting to combine grant funding under PPGs for FY97. EPA staff *in* Headquarters and the Regions have worked long and hard to ensure that we are ready to support these changes.

EPA and State leaders jointly developed the "National Environmental Performance Partnership System" (NEPPS) issued on May

17, 1995. This document sets out the framework for the new system, and remains the only guidance on NEPPS. EPA agreed to keep the system flexible during the transition year to allow for improvements in how NEPPS is implemented. Since existing grant Agency regulations do not address Performance Partnership Grants (PPGs), EPA developed interim guidance governing this new grant authority until a regulation can be developed. EPA has undertaken the development of a revision to the existing grant regulations that will reflect both PPGs and NEPPS. State officials will serve as members of the regulation development work group. The new regulation will be in place before next summer when State-EPA grant negotiations begin for FY 1998. Meanwhile, in response to State concerns about possible barriers to implementation, a joint State/EPA workgroup has been working at the Deputy Administrator's request to develop a memorandum that clarifies policies relevant to implementation of the NEPPS/PPG approach and emphasizes the shared commitment between EPA and the States to reduce or remove barriers to this new system.

In implementing NEPPS and PPGs, EPA is following through on the original intent of Congress in delegating program implementation authority to the states. This applies differently to different programs, and most certainly to different states in terms of their capacity to assume that authority. We strongly support responsible devolution of program authority to state programs with demonstrated track records, and intend to continue working to build state capacity to carry out the full range of delegable programs. However, "one size does not fit all." The concept of differential oversight embodied in the May 17, 1995 agreement by the Administrator and the states clearly delineates that strong programs will receive reduced oversight, while weaker programs should expect to receive greater Federal attention.

## REDUCTION IN REGIONAL STAFF/REGIONAL OVERSIGHT

Question: When will we begin to see a reduction in regional staff, commensurate with the reduction in oversight?

Answer: EPA is successfully working with the States to reshape the federal-state relationship to develop true partnerships between the federal government and states to provide the best possible environmental management system. At the recent EPA-States Meeting, attended by State environmental commissioners and EPA senior management, and at the EPA Annual Planning Meeting, a common theme was the need for more assistance from Regions to States to make a real working partnership effective. The Regions recently held discussions with States that revealed States and tribes highly value the technical assistance and applied science capabilities EPA brings to difficult environmental problems. Many States highly value EPA's technical, programmatic, scientific, and legal assistance in dealing with permit review and enforcement in both non-delegated and delegated programs.

EPA has focused on work-sharing with state and local governments through several new approaches, including Performance Partnerships; Regional Geographic Initiatives; XL; Compliance Assistance; and Technical Assistance. We are agreeing to maximize State and Federal resources by dividing the work, moving away from counting administrative actions, and moving toward using environmental results as our indicator of progress and success. Our role is to address problems that State programs cannot or do not have the appropriate skill-set to handle. Many geographic, tailor-made solutions are more labor-intensive and may require more time and resources, especially in the short-term. According to a Report done by ECOS magazine 23 states reduced their resources devoted to environmental management from FY 1995 to FY 1996. In addition, States continue to expect EPA to deal with federal facilities and emergency response, cross-state boundary issues, and international issues. States need the talents of many specialists, who are being brought together through reorganizations and project-specific teams. This is especially true for the regional labs who provide extensive technical support. States have begun to ask us to help fill their gaps with technical assistance and direct support, so we can reach goals we have set jointly, and are suggesting we should focus whether we, collectively are accomplishing better environmental results.

EPA has reduced oversight where appropriate, maintained oversight where we are statutorily obligated to do so, and redirected efforts towards new activities, often at the request of States, Tribes, industry, and the general public. Oversight reduction has been ongoing for the last few years. Some oversight is and will continue to be necessary; just as direct federal action will continue to be necessary in some cases. It is important to note that while we have indeed shifted resources to many new activities, we still have activities we are statutorily required to undertake. We have a legal obligation to ensure national standards and implement programs the states have elected not to take on. We have a unique role with Tribes in carrying out our Trust responsibilities.

## COMPREHENSIVE ASSESSMENT OF RESOURCE NEEDS IN THE REGIONS

Question: I understand some state environmental commissioners are pressing for substantially reduced regional oversight and others are calling for the abolition of regional offices entirely.
James Strock, of the California EPA, has asked us to undertake a "thorough reconsideration of the role of the EPA regions," asking for many of their functions to be returned to the states. NAPA recommended that EPA perform such an analysis in their report of a year ago. Do you agree the role and function of the regions needs to be reassessed? Can I get your commitment today to undertake a comprehensive assessment of the resource needs of the regions? When could the Committee receive this analysis?

Answer: EPA has been reinventing the way we do business throughout the Agency. One aspect of that reinvention has been the reorganization of our regional and national program offices to streamline our management structure and deliver services more effectively to the public. As part of this Agency-wide undertaking, the Regions are placing staff where the skills and experience could best serve our many clients. The regions have undertaken massive evaluation and analysis of our mission, legislative requirements, state relationships, and staffing needs as they relate to areas of investment and disinvestment for the future. We are conducting a review, beginning this summer, of the effectiveness of new Regional structures. This review will identify the lessons learned about what works and what does not work to inform future decisions about regional roles and structures.

The past uncertainties about FY 1996 resources and the possibility of Congressional directions that would drastically alter resources for regional programs (such as the enforcement reductions contained in the Conference Report) have made it impossible to begin a comprehensive analysis. The Agency had to make some short-term, prudent management decisions after the House action on the FY 1996 appropriation, such as hiring freezes. EPA workforce is eight percent smaller (1,500 under the workforce ceiling) as a result. As a result of the turmoil, we were unable to initiate some of the longer-term analyses concerning regional resources, the reorganizations, and the new efforts to provide flexibility to our partners in environmental management.

Simultaneously, the regions are negotiating Performance Partnership Agreements with the states, including an identification and clarification of EPA activities. For example, among many other tasks, the Delaware agreement calls for EPA to provide training for and conduct joint inspections with Underground Inspection Control staff. It also calls for EPA to participate in the review and approval of Acid Rain permits for power plants. The Illinois agreement calls on EPA to lead efforts to develop a Lake-wide Management Plan for Lake Michigan, and will continue to provide field assistance to the state in conducting ambient monitoring of water quality, among many other responsibilities. These agreements are helping to redefine and clarify regional roles as EPA-State relations evolve and mature.

## REGIONAL AND COMMUNITY "PLACE-BASED INITIATIVES"

Question: Regional initiatives. In recent years, EPA has increased significantly funding for regional or community "place-based" initiatives. For example, the budget request includes $16 million for unspecified regional multimedia initiatives, and $10 million for a brand-new sustainable development challenge grants program for communities. What is EPA's mission and purpose in funding these place-based programs? Why shouldn't these be state or local responsibility?

**Answer: EPA is committed to strengthening its community-based approach to environmental protection, working more effectively with people and their governments. Funding place-based initiatives began as a way for EPA to support critical environmental protection activities in communities to address high risk problems that were difficult to fund using traditional environmental programs. The Regional Geographic Initiatives Program was established in Fiscal Year 1994 to facilitate Regional Offices' ability to work in specific places on problems identified as high risk to human health or an ecosystem. A strong emphasis was placed on holistic solutions and strong community involvement.**

**The Regional Geographic Initiatives Program has proven to be an excellent means for the Agency to address public health and environmental problems from a community and ecosystem perspective. For example, EPA's Region VIII Office has used Regional Geographic Initiative funds to successfully address the mining waste problems in Colorado by combining the remediation expertise of EPA and the state and the priorities of the local governments and the local landowners. Through local contractors, local governments, and community clean-up groups, over 85,000 cubic yards of mine tailings were safely removed, resulting in a decrease of 1500 tons of lead in the waterways. The $16 million requested for the Regional Multimedia Programs will continue to address high risk, place-based problems and act as a main source of funding specifically targeted to do community-based environmental protection.**

EPA is initiating the Sustainable Development Challenge Grants (SDCG) Program in FY 1996 to strengthen further the Agency's tools to support communities and their ability to protect the environment. Key distinguishing features of the SDCG Program projects is the integration of environmental quality and economic prosperity issues at the community level. The SDCG program is being implemented on a small scale in FY 1996. In FY 1997, the requested $10 million is expected to leverage significant private and pubic sector funds and go directly to communities through a competitive process to catalyze sustainable development.

Place-based Initiatives address highest priority community risks and the needs identified by stakeholders, including environmental and economic needs. EPA's role varies greatly in these initiatives depending on the knowledge, ability, and resources of the regions or communities we are assisting. It is essential to have all stakeholders involved and initiating actions. EPA can act as the catalyst for cooperative efforts, bringing together multi-jurisdictional stakeholders. EPA can also provide the technical support, financial support, and authority when necessary to get stakeholders involved. In its Final Report, the Small Town Task Force identified EPA's role as "lead responsibility and authority for overseeing and coordinating the various federally mandated environmental requirements affecting small towns, many of which are spread throughout other federal agencies and jurisdictions".

The Regional Geographic Initiatives Program has given EPA the flexibility to tailor our services to the needs identified by state and local governments, and the communities themselves. The Sustainable Development Challenge Grants provide direct funding to the communities and promote capacity-building for communities to continue addressing problems after funds provided by the federal government have been spent.

DETERMINING FEDERAL FUNDING FOR "PLACE-BASED INITIATIVES"

Question: How does EPA go about determining which place-based initiatives deserve federal funding?

Answer: EPA's place-based initiatives are intended to foster implementation of integrated, geographic approaches to environmental protection that incorporate strong community involvement, and emphasize environmental quality and the associated improvements in economic viability and quality of life.

For example, criteria for selecting the Regional Geographic Initiatives, established in FY 1994, emphasize a holistic and comprehensive approach to addressing high risk environmental problems that are less than national in scope, and cannot be adequately addressed by national environmental programs. These initiatives address places, in contrast to pollutants or programs; initiatives are based on a regional, state, and /or local strategic plan(s) and are usually risk-based; problems addressed and solutions developed are primarily multimedia in nature.

In some cases, and EPA regional office works directly with state, local, and/or tribal governments, or communities to develop a strategy for the management of particular place which has been identified as a high priority due to potential risk. For example, Region V11 developed a strategic plan with the Great Plains states' environmental commissioners and governors to form an initiative to protect vase lands and ecosystems in the Great Plains which were in danger after years of farming, grazing, and industrial use. In other cases, EPA may identify a problem through a local community which has not been adequately addressed by traditional state or national programs. The Office of the Administrator reviews all proposals submitted by the Regions to ensure they meet the selection criteria and distributes funds based on need, total available resources, and strength of the proposals.

The Sustainable Development Challenge Grant (SDCG) program is a new competitive grant program, designed to encourage community initiatives that achieve environmental quality with economic prosperity, through public and private involvement and investment. The SDCG program will provide seed funds to leverage significant public and private sector investment in sustainable communities. The program will first be implemented on a small scale in FY 1996; EPA plans full implementation in FY 1997. Projects will be selected competitively, based on criteria published in the Federal Register notice inviting proposals (and comments for FY 1997 implementation). Program criteria include sustain ability, community commitment and contribution, and measurable results. A national EPA panel will recommend projects to EPA senior officials for funding.

## SCIENCE AND ENGINEERING REVIEW

Question: While EPA has made some very positive improvements to its research program, not all issues have been resolved. Dr. Bruce Alberts, President of the National Academy of Sciences, testified before the House Appropriations Committee last month: "EPA must find a way to give science and engineering review the same weight as the legal review that proposed regulatory actions and research programs receive." He recommended "the agency's chief scientific officer should be required to certify that the best science available has been considered in the process of making regulations or designing a new program." Do you agree with Dr. Alberts's comments, criticism and recommendations?

Answer: We very much agree with the objective that the best science available support our regulations and programs. As you may know, "sound science" is one of the Administrator's top priorities. To support this priority, EPA has strengthened its peer review procedures, reorganized ORD around the risk paradigm, issued a Strategic Plan for the Office of Research and Development (ORD), and issued Risk Characterization Guidance. The Risk Characterization Guidance allows key stakeholders in environmental issues to independently assess and make judgments about the significance of environmental risks and the reasonableness of our risk-reduction actions. In addition, EPA is expanding its Risk Assessment Guidance through new proposals relating to cancer assessment, neurotoxicity, and ecological effects.

At the same time, consistent with our statutes, EPA Guidelines for Regulatory Action and Policy Development go beyond science and call for comprehensive, "holistic" consideration of proposed Agency actions in terms of environmental and economic considerations, the interest of external parties, possible setting of precedents, and cross-media consequences. To provide the appropriate level of analysis and concentration of resources on Agency actions, the guidelines establish three "tiers" of science and policy review for planned rules. Tier 1 -- the Administrator's Priority Actions -- require ongoing involvement of the Administrator's Office and senior management participation (across the Agency) in the key process steps. Tier 2 -- Cross-Agency Actions -- require extensive cross media or cross-Agency involvement, with decision-making at the Assistant Administrator/Regional Administrator level. Tier 3 -- Lead Office Delegation -- do not generally require cross-Agency participation, and the responsible office determines the cross-office linkages necessary. "Analytic blueprints", which spell out the scientific, economic, technical, legal, and intergovernmental analytical requirements, are required for all Tier 1 and 2 actions, and are strongly encouraged for Tier 3 actions. These requirements assure appropriate scientific consultation and support for each action undertaken by the Agency. We believe that the guidelines outlined above provide a balanced approach and ensure the process uses the best available information.

It is important to understand that Agency rules and regulations are based on a careful balance of science and policy. The regulatory issues must be considered in terms of scientific uncertainties, engineering and technology limitations, cost considerations, legal requirements, and other societal factors. These call for the decision-maker, within each of the tiers, to make policy judgments when framing and formulating a rule. These factors and determinations are explained in the preamble of each rule so that the public can provide comment and information. The Agency believes that the public is thus assured of consistency, transparency, clarity, and reasonableness through this integrated mode of decision making, which depends upon appropriate and sound science and upon other factors designated in the statutes we administer

AGENCY PLANS FOR LABORATORY CONSOLIDATION

Question: I am concerned the agency has refused to address the issue of the laboratory structure. With lab and field offices in more than 20 locations, consolidation could bring about improved coordination and efficiencies. Last year's committee report noted our disappointment with the agency's refusal to address this issue and asked EPA to study whether any of its laboratories could be combined or eliminated, in view of declining resources and the deteriorating infrastructure in many labs. What are the agency's plans with respect to consolidating its facilities? How much could be saved through such consolidations and would not the quality and coordination of EPA's research be enhanced by such consolidations?

Answer: Over the last two years EPA has made significant strides, with the encouragement of Congress, in improving its science organization. A key element of the progress made to date has been the major reorganization of the Office of Research and Development (ORD) whose primary mission is to provide the necessary research in support of the Agency's regulatory programs and in support of key decisions made by the Agency that require quality science as its base. This reorganization involved significant changes in the laboratory and headquarters operations at ORD resulting in greatly improved management structure and processes, greater coordination within ORD, between ORD and the rest of the Agency, and with other federal science agencies, improved science quality and a strategic plan along with a set of risk criteria leading to a more consistent prioritization of EPA research activities.

The ORD reorganization involved a number of changes that included:

- Consolidation of disparate operations into 3 national laboratories -- the National Exposure Research Laboratory (NERL), the National Health and Ecosystems Effects Research Laboratory (NHEERL), the National Risk Management Research Laboratory (NRMRL), and two national centers -- the National Center for Environmental Assessment (NCEA) and the National Center for Environmental Research and Quality Assurance (NCERQA);

- Organization of the 3 national laboratories and the one national center consistent with the risk paradigm;

- A greater balance between in-house research and extramural research as a result of the STAR initiative; and

- o Establishment of a Research Coordination Council with representation from the ORD, the program offices and the regions providing for better coordination of research within the Agency and greater accountability.

In addition, there was a consolidation of the Agency's Radiation laboratories within the Office of Air and Radiation. The ORD radiation resources and programs were transferred and consolidated with OAR's Radiation and Indoor Air Program Laboratory in Las Vegas.

These changes were a result of the laboratory study in 1994 ("Research, Development and Technical Services at EPA: A New Beginning") the Agency undertook with the encouragement of Congress. The Agency moved quickly to implement the recommendations of the EPA Laboratory Study with great success. One of the decisions the Agency also made at the time, was that it would postpone any consideration of laboratory consolidation that meant physical consolidation until the summer of 1996. The Agency will review the issue of facility consolidation in the broader context of the resource realities faced by the Agency and the prioritization process the Agency is undertaking.

Question: When will we receive the study we asked for?

Answer: The Agency is examining and continuing to enhance science in support of our mission. At this time, the Agency is not conducting a study of lab consolidation options. However, as we seek continuous improvement in our science program, activities, and the responsibilities of the agency's laboratories, approaches to enhancing EPA's laboratory operations will be considered.

PLANNING, BUDGETING AND ACCOUNTABILITY TASK FORCE

Question: A report by EPA's Planning, Budgeting and Accountability Task Force dated February 23, 1996, recommended "a major restructuring of the Agency's planning, budgeting and accountability systems...a comprehensive system joining scientific analysis, planning, budgeting and accountability. The system involves more consistent and comprehensive use of science and analysis...in setting Agency priorities...and provides a rational process for redirecting resources over time to the most pressing issues." The PBA report went on to say that the first element - analysis "does not exist today an integral part of the Agency's management systems." These findings are essentially the same as those of the National Academy of Public Administration concerning the FY 96 budget process.

When will the recommendations of the Planning, Budgeting and Accountability Task Force be implemented? Will it be in time for the FY 98 budget cycle? Later, earlier?

Answer: The Agency has moved quickly to implement the recommendations of the Planning , Budgeting and Accountability Task Force. On March 5, 1996, the Deputy Administrator announced his decisions concerning -the major aspects of the Task Force's recommendations. These decisions include the development of mechanisms to integrate scientific analysis into planning and budgeting, a revised strategic planning process, revised budgeting, new accountability systems, and the establishment of a new office to implement and integrate the new system.

Implementation of the new system will take several years to be fully in place. However, we are starting now to implement components of the system as quickly as possible. For 1997, the Agency will establish a number of performance planning pilots across the Agency. These pilots will bring together environmental goals, specific desired environmental outcomes, and the resources needed to achieve those outcomes. Accomplishments against the plans will be monitored throughout 1997 as a key element of the new accountability system. For 1998, the Agency will place increased emphasis on the use of environmental goals, analytic criteria, and accountability measures to set priorities and allocate resources. In addition, the number of performance planning pilots will be expanded. FY 1999 is our target for full implementation of the new system. By that time the Agency will have prepared a new, performance-oriented, strategic plan, a goals-based budget consistent with the Government Performance and Results Act, an Agency-wide annual plan containing specific goals and annual objectives, and will have the mechanisms in place to monitor accomplishments against the annual plan.

## PBA HIRES IN 1996

Question: Of the proposed new hires in the operating plan for FY96 approximately 10 percent are for the new planning, budgeting and accountability initiative. Please describe what these new PBA hires will be hired to do. Why did PBA receive such a significant share of the new hires? Why couldn't existing OARM employees be deployed to the new PBA effort? When will the new PBA Office be operational? What is being done to ensure there is an appropriate balance amongst planning, budgeting, and accountability capabilities?

Answer: The decision to allocate new hires to PBA reflects the strong commitment by the Agency to implement as quickly as possible the recommendations of the Planning, Budgeting and Accountability Task Force. The new hires will form the core staff group to develop the mechanisms to integrate scientific analysis into planning and budgeting, revise the strategic planning process, revise budgeting, and build the new accountability systems. Both administrative and programmatic staff will be drawn from across the Agency to help ensure that the PBA system meets the diverse needs of the Agency's programs.

Representatives from across the Agency participated in an initial work group to review the functions to be performed by the new organization. A new workgroup with wide Agency representation has been formed to develop organizational options. The development of these options will include consideration of the relative balance among planning, budgeting, and accountability tasks. Our goal is to have the new PBA organization operational by the end of the calendar year.

## INFORMATION MANAGEMENT STRATEGIC PLAN

Question: An outgrowth of the 1994 NACEPT report was EPA's Information Resources Management Strategic Plan. That strategic plan envisions broad-based electronic dissemination to the public of information contained in a wide array of EPA databases. In the Agency's view, arming the public with this data will result in significant improvements in protection of public health and the environment. What plans does EPA have to ensure the quality of the data that will be provided to the public?

Answer: Most EPA-managed data is reported either by industry or state governments. They have initial responsibility for the data quality and make considerable efforts to ensure their reporting accuracy. EPA is moving aggressively toward expanded data standards and quality assurance programs to facilitate the electronic submission of its information collection. The use of electronic submission and reporting software tools can improve data quality substantially.

Question: Will it be interpreted in a manner which can be understood and which will not occasion unwarranted fear on the part of the public?

Answer: The Agency will provide full descriptive information on data sets released to the public, explaining the source and known quality or caveats related to the data so that the public can make informed judgements. EPA is committed to conveying clear, accurate, and timely information to the public.

Question: Will it have an "analysis" component as envisioned by the Planning, Budgeting and Accountability report? Will it have a risk communications component? Will the various stakeholders groups be involved in the analysis and risk communication aspects?

Answer: The plan for FY 1997 activities does not include incorporating the analysis and risk components of the Managing for Results Report to public access for information. The report prepared by the Planning, Budgeting, and Accountability Task Force identified the need to build the scientific and analytic capabilities in the Agency and identified the importance of comparative risk tools. These tools would be used internally as decision-making tools crucial to the planning, budgeting, and accountability system. As this capability and these tools become available we will evaluate the benefit of making them available to the public and our environmental partners against other competing priorities for IRM resources.

Question: Will there be adequate protection for proprietary information?

Answer: All data released to the public are screened for proprietary, confidential business, or enforcement-sensitive information. The non-sensitive data are copied for release, thereby not compromising the original sensitive data set.

## TANGIBLE ACCOMPLISHMENTS OF ETI

QUESTION: More than $100 million has been invested in ETI projects to date. What tangible accomplishments have been made with the funds provided?

ANSWER: ETI is making tangible accomplishments in the promotion of technologies that protect public health and the environment. ETI is helping to make the water Americans drink safer. One in nine U.S. residents nationwide drinks water that fails to meet federal or state drinking water standards and others face intermittent threats from dangerous and sometimes life-threatening contaminants. The Environmental Technology Initiative assists in efforts to build effective and affordable tools for addressing these threats.

- ETI is developing new membrane barriers that prevent dangerous contaminants such as cryptosporidium from entering Americans drinking water, and other technologies that will disinfect the water as well as provide quicker confirmation of drinking water safety than has traditionally been available.
- ETI is slashing the time EPA takes to approve innovative new technologies that may prove capable of monitoring for hard-to-

detect contaminants such as cryptosporidium, the deadly parasite that killed over a hundred Americans in Milwaukee, Wisconsin in 1993, and continues to pose a national threat.

- ETI is verifying the performance of new technologies that are suitable to the special cost and performance needs of small drinking water treatment systems, which serve an estimated 25 million Americans. At present, 80% of these systems are violating the Safe Drinking Water Act and exposing Americans to dangerous contaminants like coliform, giardia and lead. Without the independent verifications being funded by ETI, small communities with limited budgets will confront difficulties in choosing the right tools to solve their drinking water problems, leaving citizens at risk.
- ETI is funding the development of alternatives to chlorination as a disinfecting agent, which would address substantial and growing concerns about the effects of chlorination by-products on the long-term health of Americans.

ETI is helping to clean up the air Americans breathe, eliminating toxic air pollution that damages lungs and can cause cancer. ETI is helping to develop advanced substitutes for hazardous solvents, furniture coatings and other industrial chemicals -- which will help to reduce significantly the emissions of volatile chemicals that lead to smog, damage the lung tissues of Americans and cause a wide range of respiratory ailments.

- ETI is developing and testing ways to cut down on the especially high proportion of automobile emissions that occur in the warm-up phase after ignition, providing an intelligent solution to a long-standing health threat.
- ETI is helping to reduce Americans exposure to toxic chemicals such as mercury and dioxin from small combustion units located in heavily populated areas.
- ETI has worked with dry cleaners to find safer and more effective alternatives to the use of perchloroethylene, thereby reducing exposure to this hazardous air pollutant among workers and thousands of Americans who live near the nations more than 34,000 dry cleaning facilities.
- ETI has funded efforts to reduce dangerous toxic emissions released by the metal finishing processes used by over 3000 metal finishing facilities nationwide. One of these projects is reducing the use of chromium, which has long been known to be a cause of lung cancer in humans exposed to it occupationally. ETI also includes a project with chemical manufacturers to reduce a range of harmful chemical exposures that Americans face in their workplace.
- ETI is demonstrating a new technology that reduces emissions of nitrogen oxides, which cause acid rain and ozone and smog pollution. The project will reduce nitrogen oxide pollution in the Northeastern seaboard states by 1,000 tons per year, reducing respiratory damage and other health effects among Americans in this heavily populated region.

ETI is accelerating the cleanup of hazardous waste sites that are exposing Americans to dangerous chemicals. One in four Americans lives within four miles of a toxic waste site. ETI is reducing Americans exposure to hazardous chemicals by speeding up the approval process for new analytical methods, such as immunoassay technologies capable of quickly characterizing the nature of contamination at these sites and thereby advancing efforts to clean them up.

- ETI is piloting an automated treatment system based on innovative biological remediation technology that will clean up groundwater contamination at Superfund sites and protect Americans from the substantial health risks posed by contaminated drinking water sources.

Specific examples of the ways in which ETI investments are making a difference include:

1. COMMUNITIES AND COMPANIES GET TOP DOLLAR FOR RECYCLING PAPER, GLASS AND PLASTICS: With Environmental Technology Initiative (ETI) funding, the Chicago Board of Trade, New York State Commerce Department, the U.S. Environmental Protection Agency and the Washington State clean technology program have started the country's first commodities exchange for recycled paper, glass and plastics. Commodities traders, companies and communities across the country will now be able to get top dollar for their recyclables. Recycling paper, glass and plastics reduces the demand for waste disposal facilities, such as landfills and incinerators. This market-based approach to environmental protection also promotes sustainable economic development by reusing commodities that still have economic value.

2. PERFORMANCE VERIFICATIONS MAKE TECHNOLOGIES "APPROVABLE" BY FEDERAL/STATE REGULATORS: Many technology companies complain that they can't get customers to buy or use their new technologies based on their own, self-generated data. ETI-funded third party verification programs provide technology users with the information that they need to make informed buying decisions and permitting officials with the data necessary to approve the use of new technologies. Under the ETI funded, Environmental Technology Verification Program, EPA is partnering with public and private organizations to verify the performance of many types of new technologies. Small drinking water systems are evaluated by NSF International, a private sector testing and standards firm. The California Environmental Protection Agency is expanding the country's first state-run, technology verification program from a focus on waste clean-up technologies to pollution prevention and waste treatment technologies for the electronics, metal finishing, auto assembly and printing industries. Contaminated site characterization technologies are tested by Sandia National Labs and indoor air products by the University of Illinois. The Environmental Technology Verification program is also piloting an independent approach which will proceed without EPA involvement to assess the effectiveness of a solely, private-sector led, technology verification program.

3. MAKING CLEANER CARS: With ETI funding, the Saturn Corporation in Tennessee is working with the University of Tennessee's Clean Technology center to develop new analytical tools--computer models and software that will help the company identify pollution prevention opportunities, energy and cost savings throughout their automobile manufacturing processes.

4. COMMUNITY WATER QUALITY COST SAVINGS: With ETI funding, the City of Phoenix, Arizona and the Village of Minoa, New York are researching the use of constructed wetlands to filter their wastewater and meet state water quality standards. ETI funding will support Phoenix' efforts to prepare and process the first Clean Water Act permit for constructed wetlands. Phoenix Deputy City Manager George Britton claims this project will eventually save city ratepayers $300-500 million, improve water quality and enhance wildlife habitat in the Salt River watershed. Twenty other communities are also interested in using constructed wetlands to solve their water quality problems.

5. SMALL COMMUNITIES BENEFIT FROM DRINKING WATER SYSTEM VERIFICATION: With ETI funding, EPA and NSF International are verifying the cost and performance of packaged drinking water systems that serve small communities. These package systems offer small communities big cost savings while they protect public health

and meet drinking water quality standards.

6. ENVIRONMENTAL TECHNOLOGY EXPORTS CREATE JOBS HERE AT HOME: With ETI funding, EPA-New England, the Environmental Business Council and NALCO Fuel Tech and their partners were able to market $50-million in air quality management technologies and services to the Polish government and several Central European industries. Environmental technology export sales will generate jobs in the U.S. as NALCO Fuel Tech and their partners serve export market needs.

7. POLLUTION PREVENTION/SMALL BUSINESS: With ETI funding, the Design for the Environment Screen Printing Project has developed a variety of innovative tools and information products for the screen printing industry. One video, "Saving Money and Reducing Waste" shows how thousands of screen printers nationwide can prevent pollution and minimize waste by improving inventory control, reducing toxic chemical use, changing work practices and training their employees. This ETI project is a cooperative effort involving EPA, the Screenprinting and Graphic Imaging Association, and the New Jersey Small Business Development Center.

8. NON-PROFITS, COLLEGES AND UNIVERSITIES ARE IMPORTANT ETI STAKEHOLDERS: With ETI funding, Midwest Research Institute in Missouri is helping to develop advanced substitutes for hazardous solvents, furniture coatings and other industrial chemicals -- which will help to reduce emissions of volatile chemicals that lead to smog and can cause a wide range of respiratory ailments.

9. PUBLIC/PRIVATE PARTNERSHIPS PROMOTE TECHNOLOGY INNOVATION: With ETI funding, Tellus Institute (Boston), the University of Massachusetts Toxics Use Reduction Institute, the Neighborhood Cleaners' Association, GREENPEACE, the Amalgamated Clothing and Textile Workers' Union, the Center for Neighborhood Technology (Chicago), and Dow Chemical Company are working together to find safer and more effective alternatives to using perchloroethylene. This effort will reduce exposures to this hazardous air pollutant among workers and thousands of Americans who live near the nations more than 34,000 dry cleaning facilities.

10. COMMON SENSE APPROACHES: With ETI funding, Lockheed Corporation, EPA, DOE and a consortia of metal finishers are working together to reduce toxic emissions in more than 3,000 metal finishing facilities nationwide. One of these projects reduces chromium uses, which have long been known to cause lung cancer in humans exposed to it occupationally. ETI also includes a project with chemical manufacturers to reduce a range of harmful chemical exposures that Americans face in their workplace.

## PURPOSE OF ETI

QUESTION: Is the purpose of ETI to promote emerging environmental technologies or to help industry implement less expensive, more efficient technologies to meet environmental requirements?

ANSWER: ETI promotes emerging environmental technologies that protect public health and the environment and helps industry implement less expensive, more efficient technologies to meet or surpass environmental requirements. ETI promotes innovative environmental technologies that provide cleaner air, safer water, and the return of contaminated sites to economic viability. Companies throughout the United States are preventing pollution, reducing their use of toxics and non-renewable resources, and developing new tools that will help them move "beyond compliance."

In many cases, technologies exist which can address public health concerns, but smaller businesses and communities may not be aware of them, or may need assistance putting them in place. ETI investments support public-private partnerships where stakeholders do not have the resources to pursue technology innovation opportunities on their own.

By supporting state, local, and private sector efforts to find innovative approaches to their environmental problems, ETI is doing more than promoting technology - it is playing an integral part in EPA's efforts to reinvent regulation, by moving on from "command and control" approaches to new, performance-based systems. By accelerating the approval of technologies, piloting technology verification programs, injecting more flexibility in regulations, and streamlining permitting, ETI is removing barriers to using new technologies. Advancing the development and use of these technologies, and seeking more innovative solutions to environmental problems can move the regulated community "beyond compliance"-- cutting the cost of meeting federal and state standards, while gaining superior environmental results.

Using innovative technologies can cut compliance costs, reduce health risks, make companies more efficient and competitive, and improve community environmental services. Eliminating policy and regulatory barriers to developing innovative technologies supports technology developers' efforts to grow their companies, boost export sales, and create jobs.

Environmental technology is a high-wage, high-growth industry. More than one million Americans are employed by more than 50,000 environmental technology companies nationwide, many of whom are small businesses. The United States is by far the largest single market for environmental technology, estimated by Environmental Business International as $165 billion in 1994. Global markets are expected to grow to as much as $500 billion by the year 2000. Our trade competitors understand the importance of this growing world demand. Japan and Germany recognize environmental technology as a leading 21st century industry and are positioning themselves to compete aggressively in the global market.

## MISSION OF ETI VERSUS PROJECT XL

QUESTION: According to agency documents, ETI's mission includes facilitating development of faster, cheaper, and more flexible monitoring systems; and modifying regulations, policies and enforcement measures to eliminate barriers and provide incentives for innovation. This sounds like the state purpose of Project XL. Why are both programs needed? Doesn't the agency need legislative changes to enable industry to more comprehensively implement innovative technologies to meet environmental requirements?

ANSWER: The Environmental Technology Initiative (ETI) and Project XL are *separate* but *complementary* pieces of EPA's overall strategy to promote cleaner, cheaper and smarter ways of protecting the environment. Under the leadership of President Clinton, Vice President Gore, and Administrator Browner, EPA is drawing on the lessons of the past 25 years to “reinvent” the way we do business. Our reinvention program is proceeding on two tracks. The *first* track is designed to fix problems within the *existing* regulatory system. The *second* track is designed to develop innovative *alternatives* to the existing regulatory system. Under the first track of EPA's reinvention strategy, we are making a host of changes to individual regulatory programs. Under the second track, we are testing alternative management strategies for single facilities, industrial sectors, and communities. The knowledge gained from the bold experiments carried out under the second track will lay the groundwork for a new environmental management system for the 21st century.

By eliminating barriers and strengthening incentives for innovation within ***existing*** environmental programs, ETI serves as a critical component of the first track of EPA's reinvention strategy. ETI is supporting dozens of action-oriented projects, pilot programs and regulatory initiatives at the federal, state and local level. These range from broad-based reforms that will provide thousands of businesses, communities and other regulated entities with flexible, performance-based compliance options, to more targeted reforms that will overcome discrete problems faced by specific industries, types of technology or geographic areas. One of ETI's major goals is to promote the development of better, cheaper and more reliable monitoring systems that can facilitate the expanded use of flexible, performance-based alternatives to traditional regulation. A number of ETI projects are intended to speed the development such monitoring systems.

Project XL is the cornerstone of the second track of EPA's reinvention strategy. It provides an unprecedented opportunity for selected facilities, industrial sectors, communities, and federal agencies, to pilot alternative management systems that are less constrained by the detailed prescriptions of existing regulations and more effective in achieving better environmental results. Project XL allows its participants (along with local stakeholders) to design their own environmental management strategies in return for a commitment on their part to exceed traditional environmental standards. Many XL strategies are likely to produce improved environmental technologies (including new monitoring systems) by providing increased incentives for innovation and more latitude in developing a compliance plan. Project XL has drawn wide praise even in its early stages because it offers both the *flexibility* that businesses and other regulated entities seek, as well as the bold environmental protection ***results*** that the American public expects.

EPA's *dual track* reinvention strategy is a comprehensive approach to continually improving our environmental management system. As we streamline and improve the workings of the current system, we are also testing new tools that could provide even greater flexibility to the regulated community. Together, these two tracks will achieve the Administration's twin goals of enhanced environmental protection and economic growth.

## CRITERIA FOR INVESTIGATOR-INITIATED GRANTS

Question: Please explain how investigator initiated grants are awarded, including the criteria to select projects, the programmatic areas targeted, and the peer review process.

Answer: EPA develops a series of research topics for which Requests for Assistance (RFAs) are developed describing the environmental research EPA intends to support through research grants. This process occurs on an annual basis and has as its starting point the ORD Strategic Plan which describes ORD's long-term goals and objectives, and establishes a priority setting process to identify specific research topics.

Within the context of the Strategic Plan, the most significant scientific problems facing the Agency are identified using the risk assessment paradigm. EPA considers input from the scientific community (e.g., SAB, National Research Council, other federal agencies, etc.) and EPA laboratories, program and Regional offices in identifying these scientific issues. Once identified, EPA then decides on the most appropriate tool to use in obtaining the required scientific research. When the grants program is appropriate, EPA develops specific RFAs which describe the specific research EPA is seeking to support research grants on. Throughout this part of the process, EPA is cognizant of opportunities to collaborate or form partnerships with other federal agencies having similar interests, such as the National Science Foundation(NSF).

The RFAs are released announcing the availability of research opportunities responsive to EPA's scientific needs. Researchers at the Nation's universities and research institutions have the opportunity to submit research proposals to EPA which are responsive to the science needs identified in the RFA. All proposals are considered through a competitive award process involving peer review by external scientific experts to identify the highest quality scientific proposals. Criteria which are used in this evaluation include: 1) the originality and creativity of the proposed research; 2) the experience and competence of the principal investigator; 3) the adequacy of facilities and equipment; and 4) how well the proposal has responded to the research needs identified in the RFA. EPA uses the recommendations from the peer review as one of several factors (e.g., science quality, relevance, complements in-house research program, budget availability etc.) in deciding which proposals to support. Projects must go through a rigorous peer review.

As the state of our understanding of the environment changes we anticipate that the focus of the extramural program will evolve to reflect these changes over time. Therefore while the basic process for preparing the extramural research plan (identifying the most significant scientific needs, supporting highest quality science proposals based on peer review, and evaluating the results) will remain consistent, the specific research topics supported will gradually change.

Question: Is the NSF involved with the selection of projects? If so, how have these projects served NSF's research mission?

Answer: NSF and EPA are jointly supporting 4 topic areas under the grants program in FY96, and we currently anticipate that these joint efforts will continue into FY 97 and beyond. These 4 topics are: Water and Watersheds; Technology for Sustainable Development; Decision Making and Valuation for Environmental Policy (these first three represent the NSF-EPA Partnership); and Bioremediation. The grants under these programs serve to support the missions of both, the NSF and EPA, by providing a mechanism to support fundamental research which will increase our knowledge base and allow more informed decisions on environmental protection.

## BREAKDOWN OF BUDGET REQUEST FOR ETI

QUESTION: The FY97 budget request for ETI is $72 million. How much of that can be attributed to other programs, such as climate change, CSI, or small business compliance assistance centers?

ANSWER: Approximately $38 million dollars will be invested in support of other EPA and State technology programs aimed at improving public health and environmental protection through the development and use of innovative environmental technologies. ETI will provide $10 million in support of the DfE small business technology program, $2 million in support of pollution prevention compliance assistance centers, $4 million in grants to States for regulatory flexibility programs, $12 million to the improvement of global environmental quality and environmental technology export promotion through the USTIES program, and approximately $10 million to environmental technology partnerships and consortia which focus on the CSI industries.

Building on our current portfolio and targeting public health problems, ETI will fund partnerships (i.e., federal and state agencies to oversee work through contracts, grants and cooperative agreements that benefit technology developers and users, leveraging dollars from universities and non-profits, funding state, local and tribal governments that lack the resources to innovate) allocating $72 million to:

Break down policy barriers ($5 million), by...

- changing program policy, demonstrating and evaluating changes at the federal, State and local level;
- amending provisions to inject flexibility into existing regulations and environmental management; and,
- eliminating regulatory roadblocks and providing more incentives.

Help States reinvent permitting ($5 million), by...

- encouraging delegation to States of permitting programs to get the feds out of the loop;
- providing states with a "funded mandate" to encourage technology innovation by issuing grants to help make their programs more flexible;
- letting technology developers avoid repetition by working with the Nation's governors to allow interstate permitting;
- giving the regulated community operational flexibility within individual permits (with requisite accountability); and,
- reducing permitting barriers by giving rewards to permit writers for giving innovative technologies a chance.

Give States grants for removing barriers ($4 million), by...

- helping States relieve certification process requirements for innovative monitoring technologies, reducing time and cost in compliance processes; and,
- funding efforts to develop, demonstrate, and evaluate "soft landings" policies and compliance enhancement measures at the State and local level.

Make faster, cheaper and more flexible monitoring approval processes ($7 million), by...

- reducing the one-method-only approach to monitoring and establishing a performance-based method that provides more flexibility;
- reducing the one-program-only monitoring methods approval process and developing multi-media processes to cut the repetition for methods that satisfy more than one need;
- establishing faster, more flexible media-specific methods approval processes, especially for high priority health problems; and,
- updating technology developers on opportunities to respond to needed improvements in monitoring systems;
- educating regional and state regulators on ways to eliminate unnecessarily prescriptive permitting processes for monitoring technologies.

Provide technical assistance to small businesses ($10 million), by...

- expanding the DfE/technology program, supporting small businesses that voluntarily adopt pollution prevention measures to cut costs and pollution.

Support Compliance Assistance Centers ($2 million), by...

- developing information-sharing tools and provide technical assistance (e.g., compliance assistance) to speed the adoption of pollution-preventing technologies, making businesses more competitive by reducing both production and regulatory compliance costs in the U.S.

Improve global environmental quality and increase exports ($12 million), by...

- providing technical assistance, training and demonstrations abroad to speed the adoption of cleaner/cheaper U.S. technologies through augmenting the U.S. Technologies for International Solutions (USTIES) program.

Enhance EPA Environmental Technology Verification (ETV) Program ($10 million), by...

- expanding the scope of the existing ETV pilots that verify the performance of: drinking water plants, CSI industry pollution prevention and waste treatment systems, hazardous waste site characterization and monitoring technologies, products that impact indoor air environments, air pollution and monitoring equipment, and innovative compliance approaches that support regulatory reinvention;
- initiating new pilots, if appropriate, for segments of the environmental technology development industry that are not adequately addressed by the existing program;
- expanding outreach and information diffusion efforts on the results of innovative technology performance and cost evaluations; and,
- compiling required data to evaluate pilot program results and preparing decision options for possible long term program.

Initiate environmental technology partnerships for the 21st century ($10 million), by...

- catalyzing the formation of innovative technology consortia among industrial, academic and governmental organizations to develop, demonstrate, and utilize innovative technology to solve complex, intractable, high cost environmental management problems. Emphasis will be on the EPA Common Sense Initiative (CSI) industries as well as other industries where the potential for collaboration and joint problem solving is high.

Establish a community-based sustainable technology program ($7 million), by...

- evaluating and applying innovative technologies and management approaches by sustainable development in municipalities and small communities. An additional focus will include the pre-competitive stage development and evaluation of broadly applicable technologies and processes to promote cleaner production processes and products for small industries located in the communities.

## LESSONS LEARNED FROM ETI

QUESTION: In FY96, $10 million was provided to ETI, solely for the purpose of technology verification. The FY97 budget request is $17.6 million to expand and modify existing pilots to incorporate lessons learned from earlier years. Please describe how the funds will be spent in FY96, and the agency's plans for FY97? What have been the lessons learned in this area?

ANSWER: The majority of FY96 ETI resources will be used for supplementing the first year verification pilots and initiating up to three new pilots. The existing pilots to be supplemented are: small package drinking water, P2 and waste treatment technologies for CSI industries, site characterization consortium, and indoor air products. Candidate issues for new pilots are: compliance assurance monitoring, air control and monitoring technologies, and innovative coatings-P2. Remaining resources will support a variety of activities, including continuation of USTIES projects (verification abroad), program evaluation, information diffusion, and SBIR.

FY97 investments in verification will total $10 million and will follow the pattern of FY96. Existing pilots will be supplemented as necessary, and new pilots will be created to support segments of the environmental technology industry that are not adequately addressed by the existing program. Outreach and information diffusion regarding the results of earlier evaluations will be expanded, and program results to date will be evaluated for preparation of decision options for the future of the program.

ETV began in October 1995 with the funding of five verification pilots. Although all have similar operating principles (e.g. the use of third party verifying organizations; gradual shift from primarily federal funding to primarily private funding; substantial stakeholder involvement), numerous differences are designed into the process to test various operating parameters. After approximately eight months of operation, there are some 70 stakeholders working with EPA and its partners to define testing protocols and establish procedures. One of our first lessons has been identifying the importance of the active involvement of these participants in the process. Another lesson learned focuses on the importance and complexity of forming real operating partnerships between EPA and the third verification organizations. The design of optimal testing procedures that will be affordable to the private sector while maintaining data credibility is the program's most formidable challenge.

## BUDGET INCREASE FOR THE CLEAN CAR INITIATIVE

Question: The budget request includes $18.8 million for the Clean Car initiative, compared to last year's request of $13.5 million. Why is an increase of this magnitude requested? How much is included in the FY96 operating plan for this activity? What are other agencies contributing to this program in FY97 budget? What are the outyear budget plans for this initiative? What has been accomplished to date?

Answer: **EPA's Clean Car Initiative** represents EPA's contribution to the Partnership for a New Generation of Vehicles (PNGV), a public/private partnership between the federal government and the domestic automobile industry that promotes both U.S. economic growth as well as critical environmental goals. The Clean Car program is focused on PNGV Goal 3, to triple automotive fuel economy (which equates to a 67 percent reduction in automotive carbon dioxide emissions) without sacrificing vehicle attributes important to consumers such as performance and cost. EPA has been assigned the federal lead in two important technology areas: the development of 4-stroke, direct injection, renewable alcohol-fueled engines for hybrid vehicle applications and the development of hydro-pneumatic systems for regenerative braking and energy storage for hybrid vehicles. The recent National Academy of Sciences/National Research Council independent peer review of PNGV concluded that direct injection engines have the lowest cost and highest potential for meeting the PNGV goals relative to other candidates for the primary hybrid vehicle power train, that achieving the targeted level of nitrogen oxide emissions represented the greatest technical barrier, and that increased budget support was critical. A recent industry peer review suggested that EPA's hydro-pneumatic research deserved increased support as well.

Based on these recommendations, EPA has decided to increase the support for the Clean Car Initiative over the FY 1996 operating plan level of $13.5 million. The $13.5 million in the FY 1996 operating plan represents contract dollars only. In addition, the FY 1996 operating plan funds the Clean Car Initiative with $1.4 million for EPA staff. Therefore, the Clean Car Initiative has a total budget of $14.9 million in FY 1996.

The FY 1997 budget increases funding for the Clean Car Initiative by $2.7 million in contract dollars and $0.2 million in payroll dollars for a total program of $18.8 million. This $18.8 million for EPA's portion of PNGV compares to the total FY 1997 federal government request for the Partnership for a New Generation of Vehicles of $288 million. These funding levels are necessary to maintain the level of accomplishments to date. Improved engines and emission control strategies have been developed and evaluated. Engines designed to utilize renewable alcohol fuels (which will further reduce life-cycle carbon dioxide emissions as well as nitrogen oxide emissions) have been developed and are being adapted for hybrid vehicle application through appropriate sizing, calibration, and control systems development. The hydro-pneumatic program has identified and evaluated the most efficient state-of-the-art hydraulic components available worldwide and is now beginning to produce more efficient pump/motor units as well as accumulators that are both lighter and more efficient. Regenerative braking systems utilizing hydro-pneumatic components have shown "round-trip" energy recovery of over 80 percent, higher than similar designs using electric energy storage, and a significant technical achievement in meeting the PNGV goal of a 67 percent reduction in automotive carbon dioxide emissions.

## EPA RESEARCH BUDGET FOR FISCAL YEARS 1996 AND 1997

Question: What is the total EPA Research Budget for FY 1996 and FY 1997?

Answer: The total research budget for EPA's Office of Research and Development for FY 1996 is $460.2 million. For FY 1997, the requested research budget is $537.6 million. The FY 1997 request includes $33 million transferred into the Science and Technology appropriation for the Working Capital Fund.

Question: How much of that budget is extramural?

Answer: For FY 1996, $187.9 million is intramural (which includes salaries, travel, and operating expenses) and $272.3 million is extramural. For FY 1997, $242.0 million is intramural (includes $33.1 million for the Working Capital Fund), and $295.6 million is extramural.

Question: Of the extramural, how much goes to contractors and how much to the academic community?

Answer: At this time, we have only a Budget Object Class (BOC) breakout of the extramural resources which can be found in the table below.

($ in millions)

| Fiscal Year | Op. Exp. BOC 30 | Adm. Cont. BOC 33 | Prog Exp. BOC 29 | Prog. Cont. BOC 32 | Grants BOC 41 | TOTAL EXTRAMURAL |
|---|---|---|---|---|---|---|
| FY 1996 | $0.8 | $4.6 | $1.3 | $100.2 | $165.4 | $272.3 |
| FY 1997 | $0.8 | $1.1 | $3.8 | $105.7 | $184.2 | $295.6 |

## STAR PROGRAM

Question: Please describe the Science to Achieve Results (STAR) program.

Answer: The STAR program is a three component program managed by the National Center for Environmental Research and Quality Assurance (NCERQA) here in Washington, DC. The three components include:

1) Focused Requests for Assistance (RFAs), which are targeted at specific research topics defined by the ORD Strategic Plan and that address the science needs of the EPA Program Offices and Regions. This component supports investigator-initiated research by universities and other not-for-profit research institutions that complements the expertise in ORD laboratories. A portion of the program is conducted jointly with other federal agencies.

2) The Exploratory Research Grants Program, which has two parts. The first provides support for investigator-initiated grants in broad areas such as environmental chemistry and physics, health and ecological effects of pollution, that are not covered by the RFAs. The second, Early Career Research Awards, supports outstanding scientists and engineers at the onset of their research careers.

3) The Graduate Fellowship Program, which provides support for masters and doctoral students in environmental sciences and engineering. This program supports the development of the Nation's environmental science and technology base for addressing environmental concerns into the next century. This program is announced nationally, providing broad opportunities to apply. Applicants are judged by external peer reviewers and are selected based on their record and their potential for the future. It is meant to recruit the "best and brightest" into environmental science and technology to serve the full range of national workforce needs-- national, state and local governments, EPA laboratories, as well as industry, universities, and others.

In FY 1997, the Environmental Research Centers will be added to the STAR program. The Environmental Research Centers Program offered by NCERQA supports competitively selected universities, or consortia of universities, that focus long-term, multi- disciplinary research on issues of broad concern to EPA.

Question: How much did you award under the STAR Program in FY 1996?

Answer: The FY 1996 STAR awards in the areas described above are estimated to be approximately $85 million.

Question: What is the Fiscal Year 1997 budget request for this program?

Answer: The President's Budget Request for the STAR program in FY 1997 is $115 million.

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# ENVIRONMENTAL PROTECTION AGENCY 1996 GRANTS FOR RESEARCH

The U.S. Environmental Protection Agency (EPA) invites research grant applications in the following areas of special interest to its mission:

11. Endocrine disruptors

12. Role of Interindividual Variation in Human Susceptibility to Cancer

13. Risk-Based Decisions for Contaminated Sediments

This invitation provides relevant background information, summarizes EPA's interest in the topic areas, and describes the application and review process.

**Background**

During fiscal year 1995 EPA increased funding for its investigator-initiated research grants program. For fiscal year 1996, EPA anticipates a second increase, subject to the 1996 Federal appropriation process. In December 1995 EPA issued a Request for Applications (RFA) which summarized its interest in 9 programmatic areas. This announcement supplements that RFA and solicits research proposals in 3 additional topical areas. Additional programs involving cooperation with the National Science Foundation and other agencies were announced separately.

**EPA Mission and R & D Strategy**

The mission of EPA - and its unique role - is the protection of both environmental quality and human health through effective regulations and other policy implementation. Achievement of this mission requires the application of sound science to the assessment of environmental problems and evaluation of possible solutions. A significant challenge is to support both long-term research that anticipates future environmental problems as well as to fill significant gaps in knowledge relevant to meeting current Agency goals. This Request for Applications and the joint solicitations with other agencies are important steps toward ensuring that EPA can provide a sound scientific foundation as the country enters a new generation of environmental protection.

EPA recently reorganized its research programs to focus on the reduction of uncertainty associated with risk assessment and reduction of risks to human health and ecosystems. Through its laboratories and through grants to universities and other not-for-profit institutions, EPA will promote research in both domains, according the highest priority to those areas where risk assessors are most in need of new concepts, methods, and data. At the same time, EPA will foster the development and evaluation of new risk reduction technologies across a spectrum, from pollution prevention, through end-of-pipe controls, to remediation and monitoring. In all areas, EPA is interested in research that

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**Research Programs of Interest**

*11. Endocrine Disruptors*

Reports have been accumulating that both humans and wildlife species have experienced adverse health consequences resulting from exposure to environmental pollutants that interact with the endocrine system. These pollutants are collectively referred to as "endocrine disruptors," a term broadly defined as "an exogenous agent that interferes with the production, release, transport, metabolism, binding, action, or elimination of natural hormones in the body responsible for the maintenance of homeostasis and the regulation of reproductive and developmental processes." The Agency is concerned with potential effects posed by environmental agents that act as hormones or anti-hormones, as well as chemicals or mixtures which perturb components of the endocrine system through as yet uncharacterized modes of action.

To date, problems have been identified primarily in domestic or wildlife species with high exposure to organochlorine compounds, including DDT and its metabolites, PCBs and dioxins, some organometals, unidentified components of certain types of complex effluents and emissions, and/or to naturally occurring plant estrogens. Whether similar effects are occurring in the general human or wildlife population is unknown. Several reports of declines in the quality and quantity of sperm production in humans over the last four decades and reported increases in incidence of certain cancers (breast, prostate, testicular) have led to speculation about environmental etiologies. Correlational evidence suggests that specific populations of animals such as birds, fish, reptiles, and mammals have been, or currently are being, adversely impacted by exposure to environmental contaminants that may manifest effects through the endocrine system.

The objective of EPA's Endocrine Disruptor research program is to evaluate potential health effects associated with endocrine disruptors and to determine the extent of current exposures. Investigator-initiated grant proposals are sought in four broad areas: (1) human health effects, (2) ecological health effects, (3) human exposure evaluations, (4) ecological exposure evaluations.

Examples of research topics of interest to EPA include:

- Refinement of methods to monitor and characterize exposure of humans and/or wildlife to endocrine disruptors, including aspects such as exposure half-life, speciation, uptake, and phase equilibrium.
- Development and validation of models to estimate exposure to endocrine disruptors from different sources via multiple pathways.
- Development and validation of biomarkers of endocrine disruptor exposure and effect.
- Development and validation of *in vitro* and short-term *in vivo* test systems to screen for chemicals with specific mechanisms of action expressed via different endocrine pathways; test systems that are applicable across multiple phylogenetic levels are of particular interest.
- Development of Physiologically-Based Pharmacokinetic (PB-PK), Physiologically-Based Toxicokinetic (PB-TK), and Biologically-Based Dose-Response (BBDR) models that incorporate key species-specific parameters critical to the extrapolation of effects across phyla.

- Refinement and validation of methods and models that relate effects observed at subcellular levels to adverse impacts in individuals (both human and wildlife species) and in wildlife populations.

Funding: Up to $3.5 million is expected to be available in fiscal year 1996 for awards in this program area. The projected award range is $100,000 - $200,000/year for up to 3 years.

### *12. Role of Interindividual Variation in Human Susceptibility to Cancer*

Background

In 1994, the National Academy of Sciences released the report, *Science and Judgment in Risk Assessment*. This report, which was produced in response to the Clean Air Act Amendments of 1990, evaluated risk assessment methods at EPA and drew a series of conclusions and recommendations. Included was the issue of variation in human susceptibility. On this issue, the report concluded that EPA's consideration of interindividual variability has been limited largely to noncarcinogenic effects, such as asthmatic responses to sulfur dioxide exposure, and suggested that EPA include consideration of interindividual variability in its cancer risk assessments. The NAS recommended that:

> (1) Federal agencies should sponsor molecular, epidemiological, and other types of research to examine the causes and extent of interindividual variability in susceptibility to cancer and the possible correlations between susceptibility and such covariates as age, race, ethnicity, and sex. Results should be used to refine estimates of risks to individuals and the general population.
>
> (2) EPA should increase its efforts to validate or improve the default assumption that humans on average have the same susceptibility as humans in epidemiological studies, the most sensitive animals tested, or both.

The NAS report stated that human beings vary substantially in their inherent susceptibility to carcinogenesis, both in general and in response to any specific stimulus or mechanism. Point estimates of carcinogenic potency of a substance will not apply to all individuals in the population. They further stated that variability affects each step in the carcinogenic process (e.g., carcinogenic uptake and metabolism, DNA damage, DNA repair and misrepair, cell proliferation, tumor progression, and metastasis) and that the variability arises from many independent factors, some inborn and some environmental. NAS stated that it appeared that some of the individual determinants are distributed bimodally or perhaps trimodally in the population (e.g., hypersusceptible people such as those with germ-line mutations in tumor suppressor genes) while other determinants seemed to be distributed more or less continuously and unimodally with either narrow or broad variances (e.g., the kinetics or activities of enzymes that activate or detoxify particular pollutants).

Description

In this RFA, EPA is interested in: (1) the identification of human genetic polymorphisms which can affect carcinogenic risk from environmental agents, (2) the quantitative relationship of these polymorphisms to the risk of cancer from environmental agents, and (3) the distribution of such polymorphisms in the general population. Response to this RFA should address human variation in susceptibility with regard to polymorphisms and a specific chemical carcinogen of concern to the Agency.

Funding: Up to $2.0M is expected to be available in Fiscal Year 1996 for this program area. The projected award range is $100,000 - $200,000/year for up to 3 years.

### *13. Risk-Based Decisions for Contaminated Sediments*

Many persistent chemical contaminants in aquatic ecosystems eventually accumulate in sediments where they may adversely affect the benthic biota, become a source of contamination in the water column, accumulate in biological tissues, and enter pelagic and human food chains. Contaminated sediments now appear to be the main source of toxic contaminants in many bays, lakes, and rivers. For example, of the Great Lake's 42 Areas of Concern, 33 have degraded water quality problems associated with contaminated sediments. Because of their potential adverse impacts, the long periods of time associated with natural assimilation of many in-place contaminants, and the high costs of mitigation, sediments have become a focus of concern for EPA.

The following areas of research provide the framework for the competition:

#### Risk-Based Assessments

##### Hazard Identification

All assessment techniques, either biological or chemical, need validation of their ability to predict impacts on indigenous aquatic communities. When laboratory data and test systems are being used to predict contaminated sediment impacts, there needs to be a strong lab-to-field association. Research is needed to validate these techniques using a risk-based approach. Validation efforts must consider the uncertainty associated with the assessment and the degree of protection offered to the aquatic community.

The effects of contaminants associated with sediments is often manifested through aquatic food chains. Research and mathematical modeling is needed to accurately characterize the transfer of toxic substances from their source to the sediments, from sediments to organisms, and organism to organism.

##### Dose-Response

Short-term sediment toxicity test methods to examine aquatic life effects using laboratory animals exist. In addition, there are some theoretical models to predict whether certain single chemical concentrations will have an adverse impact on benthic communities. Most contaminated sediments contain mixtures of chemicals; thus, mixture toxicity research and modeling both for organic substances and trace metals are needed to complement single chemical assessments. Further research is needed to expand the number and kind of species being tested.

##### Exposure Assessment

Knowledge of the fate and bioavailability of toxic substances in sediments is sometimes highly speculative. Additional knowledge is needed on: (1) the fate of toxic substances during resuspension, especially during severe events, and biological, chemical and physical factors controlling resuspension of sediments, (2) the spatial (horizontal and vertical) and temporal extent of sediment contamination, and (3) biogeochemical partitioning between sediments, water, and biota to better predict bioavailability of chemicals believed to have adverse impacts.

#### Risk Management

##### Sediment Treatment

Contaminated sediments requiring treatment can result from either sediment management operations (e.g., maintenance dredging) or remediation efforts. The environmental risks associated with these sediments need to be reduced. For example, better methods to predict the extent to which dredging operations resuspend and transport contaminants to less contaminated areas are needed. Research is needed to develop innovative treatment options for sites with large volumes of contaminated sediment (e.g., harbors).

Proposals that address the above mentioned needs are invited. Proposals must relate how the research will facilitate better risk assessments and risk management decisions.

Funding: Approximately $2.0 million is expected to be available for awards under this program area. The projected award range is $100,000 - $200,000/year for up to 3 years.

### *The Application*

Proposed research projects must be designed to advance the state of knowledge in the indicated areas. The Application Kit for Assistance contains detailed instructions on how to prepare your application. The application kit is available at most institutional offices of sponsored research or may be obtained from EPA at:

U.S. Environmental Protection Agency
National Center for Environmental Research and Quality Assurance (8703)
401 M Street SW
Washington DC 20460
Phone: (202) 260-3837
Fax: (202) 260-2039

Each application must contain the following:

A. Application for Federal Assistance (Standard Forms 424 and 424A). These forms must have original signature.

B. A detailed, itemized budget for each year of the proposed project.

C. A budget justification describing the basis for calculating the personnel, fringe benefits, travel, equipment, supplies, contractual support, and other costs identified in the itemized budget.

D. An abstract containing the following information: The project title, the names and affiliations of all investigators, and a summary of the objectives, expected results, and approach described in the proposal. The abstract must not exceed one (1) 8.5 x 11 inch page of single-spaced standard 12 point type with 1 inch margins.

E. A Description of the Project. This description must not exceed fifteen (15) pages. All pages must be consecutively numbered, 8.5 x 11 inch, single-spaced standard 12 point type with 1 inch margins. The description must provide the following information (1-5):

    1. Objectives: List objectives of the proposed research and/or the hypotheses being tested during the project.

    2. Expected Results or Benefits: Describe the results you expect to achieve during the project and the benefits of success.

    3. Approach: Outline the methods, approaches, and techniques that you intend to employ in meeting the objective stated above.

4. General Project Information: Discuss other information relevant to the potential success of the project. This might include facilities, project schedules, proposed management, interactions with other institutions, etc.

5. Quality Assurance: A brief narrative statement (not to exceed two consecutively numbered, 8.5 x 11 inch pages of single-spaced standard 12 point type with 1 inch margins) describing the quality assurance procedures proposed for the project (see section of this RFA on quality assurance).

F. Any important attachments, appendices, references, or other information may be included but must not exceed five (5) pages.

G. The resumes of the principal investigator, and co-workers. Resumes must not exceed two consecutively-numbered, 8.5 x 11 inch pages of single spaced standard 12 point type with 1 inch margins.

H. Standard Form (SF) 5700-48 Procurement System Certification (provided in Application Kit).

I. Standard Form (SF) 5700-49 Debarment and Suspension Certification (provided in Application Kit).

J. A list of key contacts (provided in Application Kit) including authorizing representative, payee, administrative contact, and project manager.

K. Disclosure of Lobbying Activities (provided in Application Kit).

L. Copy of State Clearing House Approval Notification (see Application Kit to determine if applicable).

M. In lieu of the Application Receipt Letter provided in some Application Kits, the applicant must include a blank self-addressed, stamped post card with the application.

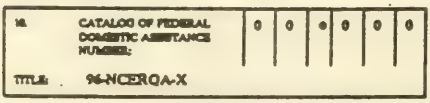
The application must contain all of the above, in the order listed.

Sorting Codes

In order to facilitate proper assignment and review of applications, applicants are asked to identify the topic area in which their application is to be considered. Applications must be identified by printing the appropriate Sorting Code (see below) in block 10 of the SF-424.

| | |
|---|---|
| Endocrine Disruptors | 96-NCERQA-11 |
| Role of Interindividual Variation in Human Susceptibility to Cancer | 96-NCERQA-12 |
| Risk-Based Decisions for Contaminated Sediments | 96-NCERQA-13 |

The Sorting Code must be placed in Block 10 of SF 424 as shown below:



10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 0 0 • 0 0 0

TITLE: 96-NCERQA-X

The Sorting Code must also be included in the address on the package that is submitted to EPA (see next section on how to apply).

## How to Apply

To be considered, the original and ten (10) copies of the fully developed research grant application and five (5) additional copies of the abstract (fifteen in all), must be received (post-marked if sent by U.S. Mail) by the National Center for Environmental Research and Quality Assurance no later than **4:00 P.M. EST** on the closing date assigned to these topic areas, **May 1, 1996**.

The application and abstracts must be prepared in accordance with instructions in the Application Kit for Federal Assistance and this RFA. Informal, incomplete, or unsigned proposals will not be considered. Completed applications should be sent via regular or express mail to:

U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research and Quality Assurance (8703)
Sorting Code: 96-NCERQA-X [X=11, 12, or 13]
Room M2426
401 M Street SW
Washington DC 20460

Applications sent via express mail should have the following telephone number listed on the express mail label: (202) 260-3837

## Quality Assurance

Data sets resulting from EPA-funded environmental research often are used by government officials when establishing standards or when making other policy decisions. Explicit indicators of data quality are essential for determining whether a particular data set is appropriate for use in a specific context. To that end, EPA regulations require that grant-funded projects address quality assurance.

The application must include a quality assurance narrative statement, not to exceed two pages, which for each item listed below, either presents the required information or provides justification as to why the item does not apply to the proposed research.

- The intended use of the data and the associated acceptance criteria for data quality (i.e., precision, accuracy, representativeness, completeness, and comparability).
- Project requirements for precision, accuracy, representativeness, completeness, and comparability, and how these will be determined.
- Procedures for selection of samples or sampling sites, and collection or preparation of samples.
- Procedures for sample handling, identification, preservation, transportation, and storage.
- Description of measurement methods or test procedures, with a statement of performance characteristics if methods are non-standard.
- Standard quality assurance/quality control procedures (e.g., American Society for Testing Materials, American Public Health Association, etc.) to be followed. Non-standard procedures must be documented.
- Data reduction and reporting procedures, including description of statistical analyses to be used.

## Guidelines and Limitations

Subcontracts for research to be conducted under the grant that exceed 40% of the total direct cost of the grant for each year in which the subcontract is awarded will be subject to special review.

## Additional Requirements

Researchers will be expected to participate in an annual All-Investigator's Meeting with EPA researchers and other grantees and cooperators to report on research activities and to discuss issues of mutual interest.

## Eligibility

Academic and not-for-profit institutions located in the U.S., and state or local governments are eligible under all existing authorizations. Profit-making firms are eligible only under certain laws, and then under restrictive conditions, including the absence of any profit from the project. Federal agencies and federal employees are not eligible to participate in this program. Potential applicants who are uncertain of their eligibility should contact EPA's Grants Operations Branch at (202) 260-9266.

## Review and Selection

All grant applications are initially reviewed by EPA to determine their legal and administrative acceptability and responsiveness to this solicitation. Acceptable applications are then reviewed by an appropriate technical peer review group. This review is designed to evaluate and rank each proposal according to its scientific merit. Each review group is composed primarily of non-EPA scientists, engineers, social scientists, and/or economists who are experts in their respective disciplines. All reviewers are proficient in the technical areas that they are reviewing. The reviewers use the following criteria in their reviews:

- quality of the research plan (including theoretical and/or experimental design, originality, and creativity);
- qualifications of the principal investigator and staff, including knowledge of relevant subject areas;
- potential contribution of the research to advancing scientific knowledge in the environmental area;
- availability and adequacy of facilities and equipment; and
- budget justification -- justification for equipment will receive special attention;
- responsiveness to solicitation objectives.

Funding decisions are the sole responsibility of EPA. Grants are selected on the basis of technical merit, relevancy to the research priorities outlined, program balance, and budget.

EPA anticipates making awards from this RFA by September 1996.

## Proprietary Information

**By submitting an application in response to this solicitation, the applicant grants EPA permission to share the application with technical reviewers both within and outside of the Agency. Applications containing proprietary or other types of confidential information will be immediately returned to the applicant without review.**

## Funding Mechanism

The funding mechanism for all awards issued under this solicitation will consist of a grant between EPA and the recipient. In accordance with Public Law 95-224, a grant is used to accomplish a public purpose of support or stimulation authorized by Federal statute rather than acquisition for the direct benefit of the Agency. In using a grant instrument, EPA anticipates that there will be no substantial involvement during the course of the grant between the recipient and the Agency.

## Contacts

Additional general information on the grants program may be obtained by contacting:

U.S. Environmental Protection Agency
National Center for Environmental Research and Quality Assurance (8703)
401 M Street SW
Washington DC 20460
Phone: (202) 260-3837
Fax: (202) 260-2039

Applicants with technical questions may contact the appropriate individual identified below.

## Contacts for Research Topics of Interest

*Endocrine Disruptors*

- Robert Menzer 202-260-5779
  menzer.robert@epamail.epa.gov

*Role of Interindividual Variation in Human Susceptibility to Cancer*

- David Reese 202-260-7342
  reese.david@epamail.epa.gov

*Risk-Based Decisions for Contaminated Sediments*

- David Reese 202-260-7342
  reese.david@epamail.epa.gov

## THE SCIENCE TO ACHIEVE RESULS (STAR) PROGRAM

## Preface

The Office of Research and Development (ORD) has transformed itself during the past two years to provide better science specifically targeted to meet the needs of decisionmakers in the Environmental Protection Agency. As a part of that transformation, ORD has started the Science To Achieve Results (STAR) program - the focus of this Report to Congress. This Report reflects the progress that we have made in constructing a new foundation for science and research in EPA that is: 1) based on risk and our on ability to improve our risk assessments by reducing uncertainty, and 2) based on our ability to contribute to better, and more cost-effective risk reduction.

As a part of this transformation, ORD has prepared a risk-based Strategic Plan. In preparing this plan ORD has developed and applied human health and ecological criteria to establish priorities for research and for scientific and technical support to the Agency.

To further enhance this risk-based research approach, ORD has consolidated a large number of laboratories and HQ offices and has organized itself around the risk assessment paradigm. ORD has established an Effects Laboratory that integrates research on human health and ecological effects, an Exposure Laboratory that integrates research on stressors that affect both people and ecosystems, and a Risk Management Laboratory that looks to develop better, more cost-effective methods for preventing pollution, as well as for controlling and mitigating pollution when necessary. In addition, a newly created Risk Assessment Center will bring together the data from our laboratories and the published scientific literature to develop credible, peer reviewed, state-of-the-art risk assessments for the Agency, and will do research on improving risk assessment methods.

In addition to consolidating the research laboratories, ORD has created an in-house, intramural research and technical support program that allocates resources and assigns ORD scientists to areas of highest risk and greatest importance to the Agency.

Finally, ORD has made a major commitment to include the best scientists from this country's universities and non-profit centers in our research program to ensure the highest possible quality of science. Applicants for STAR grants must propose relevant research based on excellent science, as determined through external peer review by experts drawn from throughout the national scientific community. Through a grants program that is targeted to issues of importance to the Agency, ORD's goal is to meet the specific science needs of the EPA, building on the scientific creativity of the country's foremost research scientists.

# Introduction

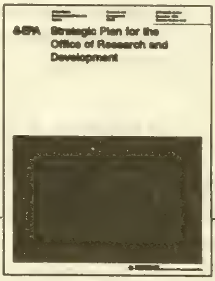
In recent years, a number of groups have reviewed the issue of science at the EPA and have come to remarkably similar conclusions. The Agency's independent Science Advisory Board, two expert blue-ribbon panels convened by the National Academy of Sciences and the National Academy of Public Administration, and several other independent groups all have emphasized the importance of science at EPA and made many recommendations concerning its role and direction. (Appendix 1) As these groups affirmed, science provides the foundation for credible environmental decision-making.

In response, during the past two years there have been many organizational and operational changes in ORD. These changes represent a significant departure from the past. They are based on a set of strategic principles that draw upon the many recommendations that we have received from outside groups in recent years. The most important of these principles is the explicit use of risk to shape and focus our organizational structure and research agenda.

## *ORD's Strategic Principles*

1. Focus research and development on the greatest risks to people and the environment, taking into account their potential severity, magnitude, and uncertainty.
2. Focus research on reducing uncertainty in risk assessment and on cost effective approaches for preventing and managing risks.
3. Balance human health and ecological research.
4. Give priority to maintaining the strong and viable scientific and engineering core capabilities that allow us to conduct an intramural research and technical support program in areas of highest risk and greatest importance to the Agency.
5. Through an innovative and effective human resources development program, nurture and support the development of outstanding scientists and engineers at EPA.
6. Take advantage of the creativity of the nation's best research institutions by increasing competitively awarded research grants to further EPA's critical environmental research mission.
7. Ensure the quality of the science that underlies our risk assessment and risk reduction efforts by requiring the very highest level of independent peer review and quality assurance for all our science products and programs.
8. Provide the infrastructure required for ORD to achieve and maintain environmental science.

The first major change in ORD was to reorganize ORD so that its new structure mirrors the risk paradigm. This new structure is illustrated in Appendix 2. ORD's Strategic Plan is the second major step. This plan, published for external and internal peer review in November 1995, defines new strategic directions (including ORD's vision, mission and goals) for ORD research, establishes a risk-based process that will be used to determine future research priorities, describes how the Strategic Plan is to be translated into a specific research program (including research plans, operating plans, and laboratory implementation plans), presents approaches to measuring success, and describes ORD's commitment to the intramural and human resources essential to implementing the Strategic Plan. This plan has been used to develop the near-term priorities for ORD research in FY 1997 - 1999, and to ensure that current research (FY1996) is consistent with the goals and objectives that are described.



EPA Strategic Plan for the Office of Research and Development

### *ORD's Long-Term Goals*

1. Develop scientifically sound approaches to assessing and characterizing risks to human health and the environment.

2. Integrate human health and ecological assessment methods into a comprehensive multimedia assessment methodology.

3. Provide common sense and cost-effective approaches for preventing and managing risks.

4. Provide credible, state-of-the-art risk assessments, methods, models and guidance.

5. Provide reliable scientific, engineering, and risk assessment/risk management information to private and public stakeholders.

6. Provide national leadership and encourage others to participate in identifying emerging environmental issues, characterizing the risks associated with these issues, and developing ways of preventing or reducing these risks.

One very important part of these changes was to ensure that ORD laboratories had a consistent base to support a stronger and better intramural research program. A second part was to recruit and engage the participation of the nation's best scientists in the implementation of ORD's new research program in order to add the creativity that leading researchers would bring. This infusion of expertise is to be accomplished by the new STAR (Science To Achieve Results) Program.

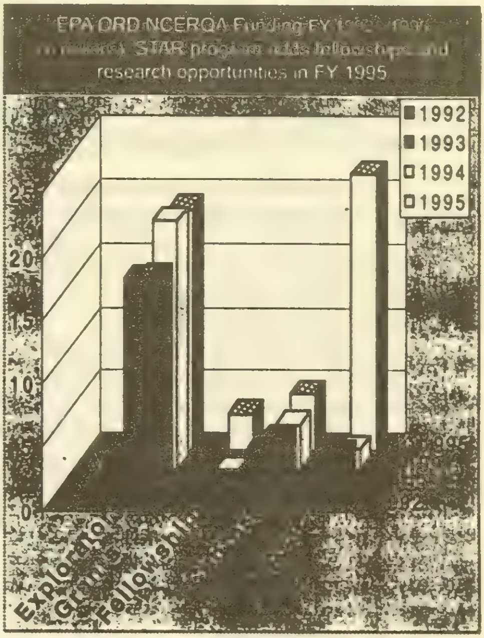
# Science To Achieve Results (STAR) Program

*A three component program:*

1. **Focused Requests for Applications** (RFAs) which are targeted at specific research topics defined by the ORD Strategic Plan and that address the science needs of the EPA Program Offices and Regions. This component supports investigator initiated research by universities and other not-for-profit research institutions that complements the expertise in ORD laboratories. A portion of the program is conducted jointly with other federal agencies.

2. **The Exploratory Research Grants Program**, has two parts. The first provides support for investigator initiated grants in broad areas such as environmental chemistry and physics, health and ecological effects of pollution, that are not covered by the RFAs, and the second, Early Career Research Awards supports outstanding scientists and engineers at the onset of their research careers.

3. **The Graduate Fellowship Program**, provides support for master's and doctoral students in environmental sciences and engineering. This program supports the development of the Nation's environmental science and technology base for addressing environmental concerns into the next century. This program is announced nationally, providing broad opportunities to apply. Applicants are judged by external peer reviewers and are selected based on their record and their potential for the future. It is meant to recruit the "best and brightest" into environmental science and technology to serve the full range of national workforce needs - national, state and local governments, EPA laboratories, as well as industry, universities, and others.



The STAR program complements other competitive opportunities for research funding. Within ORD, the National Center for Environmental Research and Quality Assurance (NCERQA), responsible for STAR, also manages the Environmental Research Centers Program which supports competitively selected universities, or consortia of universities, that focus long-term, multi-disciplinary research on issues of broad concern to EPA (In FY97 the Environmental Research Centers will be added to the STAR program). Other Research Centers, such as the Hazardous Substances Research Centers mandated by CERCLA, and other Congressionally mandated centers are also a part of the National Center for Environmental Research and Quality Assurance.

The largest part of the STAR Program (item #1 on page three) is based on a series of Requests for Applications (RFAs) that are developed by ORD together with the EPA Program Offices and Regions. These RFAs are targeted to very specific research needs that EPA has defined that support the efforts of the entire Agency and are awarded only after very rigorous external peer review and internal relevancy review. So, for example, in 1995 ORD requested proposals in areas such as:

- Reducing Uncertainty in risk assessment and improving risk reduction approaches
    - Human Health Risk Assessment
    - Indoor Air Quality in Large Office Buildings
    - Air Pollutants(Particulate Matter, Troposheric Ozone, and Toxics)
    - Regional Hydrologic Vulnerability
- Exploratory research grant program
    - Chemistry and Physics of Air, and Water
    - Environmental Biology
    - Engineering
    - Socio-economics
    - Minority Institutions
- Incentives and impediments to pollution prevention
- National Science Foundation NSF/EPA partnership for Environmental Research
    - Water and Watersheds
    - Technology for a Sustainable Environment
    - Valuation and Environmental Policy

*Appendix 3 lists the grants awarded in Fiscal Year 1995.*

In 1996, ORD is requesting applications in *(See Appendix 4 for a more complete description of the 1996 RFA's):*

- Ecological Assessment, including regional ecosystem protection and restoration and global climate change
- Exposure of Children to Pesticides
- Air Quality, including tropospheric ozone, air toxics, and indoor air
- Analytical and Monitoring Methods, including field analytical methods, continuous measurement methods, and leachibility prediction
- Drinking Water, including microbial pathogens and disinfection by-products
- Environmental Fate and treatment of Toxics and Hazardous Wastes, including fate and mobility of contaminants in soils and groundwater and the assessment of risks of contaminated soils and treatment residuals
- Environmental Statistics
- High Performance Computing
- Risk-based Decisions for Contaminated Sediments
- Endocrine Disruptors
- Role of Interindividual Variability in Human Susceptibility to Cancer.

In addition, as in 1995, ORD has announced several RFAs together with the National Science Foundation in:

- Water and Watersheds
- Technology for a Sustainable Environment, including Green Chemistry
- Decision-making and Valuation for Environmental Policy

Also, in 1996, ORD, in cooperation with the National Science Foundation, the Department of Energy, and the Office of Naval Research, has requested applications for research in Bioremediation.

STAR invites investigator-initiated proposals on these topics from scientists in all eligible institutions across the Nation. Competitions for these grants are announced widely through the Federal Register, Internet, university and scientific organizations, and by direct mail, among other mechanisms. This enables the STAR program to draw research ideas from virtually the entire scientific community. Applicants for STAR grants must propose relevant research based on excellent science, as determined through peer review by experts drawn from throughout the national scientific community.

## Relation of the STAR Program to the ORD Strategic Plan

The STAR Program is an important component of the new directions described in the Strategic Plan for ORD. It is important to recognize, therefore, that the STAR Program represents a mechanism for accomplishing the research objectives in the plan and is not an independent, stand-alone program. The STAR Program is derived from, and is a part of, the topic-specific research plans that are currently being developed from the ORD Strategic Plan. Each such research plan, such as for particulates in air or for disinfection byproducts in drinking water, describes the specific research that must be done to provide the information that EPA policy makers need in order to make decisions. These research plans are written by Agency-wide work groups and undergo independent peer review. When the plans are final, ORD then decides which work can best be accomplished with the skills and expertise of the intramural staff, and which research is best accomplished through grants or other mechanisms. The specific Requests for Applications in the STAR Program are thus written to be consistent with the ORD Strategic Plan and research plans, and also to be complementary to the work done intramurally.

The ORD Strategic Plan lists the six highest priority areas for research for the next few years:

- Drinking water disinfection
- Particulate matter in the air
- Human health protection
- Ecosystem protection
- Endocrine disruptors
- Pollution prevention and new technologies

In each of these areas ORD is developing an extensive intramural research program and a complementary extramural program.

### Relationship of Requests for Applications (RFA's) to ORD Strategic Plan Priorities

| | Drinking water disinfection | Particulate matter in the air | Human health protection | Ecosystem protection | Endocrine disruptors | Pollution prevention and new technologies |
|---|---|---|---|---|---|---|
| Ecological Assessment [illegible] ecosystem protection [illegible] global climate change | | | ○ | ○ | | |
| Exposure of Children to Pesticides | | | ● | | ● | |
| Air Quality, including tropospheric ozone, air toxics, and indoor air | | ○ | ○ | | | |
| **Analytical and Monitoring Methods**, including field analytical methods, continuous measurement methods, and leachibility prediction | ● | | ● | ● | | |
| Drinking Water, including microbial pathogens and disinfection by-products | ○ | | ○ | | | |
| **Environmental Fate and treatment of Toxics and Hazardous Wastes**, including fate and mobility of contaminants in soils and groundwater and the assessment of risks of contaminated soils and treatment residuals | ● | | ● | ● | | |
| Environmental Statistics | ○ | | ○ | ○ | | |
| High Performance Computing | | ● | ● | ● | | |
| Risk-based Decision [illegible] ments | | | ○ | ○ | ○ | |
| Endocrine Disruptors | | | ● | ● | ● | |
| Role of Inter[illegible] Susceptibility | | | ○ | | | |
| Water and Watersheds | ● | | | ● | | |
| Technology for a Sustainable Environment, including green chemistry | | | ○ | ○ | | ○ |
| Decision-making and Valuation for Environmental Policy | | | | | | ● |
| Bioremediation | | | | ○ | | ○ |

## Relation of the STAR Program to EPA science needs

Agency-wide Research Coordinating Teams composed of people from ORD, the Program Offices, and Regions develop topic-specific research plans. These Teams use the EPA risk-based criteria in the ORD Strategic Plan to select the most important research that is needed by the EPA. These decisions, reflected in the topic-specific research plans, constitute the science needs of the Agency coupled with an assessment of the likelihood that research can significantly reduce the uncertainty in an Agency risk assessment, or that research could materially improve the way that significant environmental risks are controlled or managed. The RFAs are then written to cover a portion of the topic-specific plan. Proposals that are received in response to an RFA undergo external peer review by independent scientists. The reviews look only at the scientific and technical merit of the proposals and how well they relate to the subject of the RFA. The highest ranked proposals are then brought forward for consideration for EPA funding. An Agency-wide group selects the proposals that best fulfill the Agency's science needs, and that also complement the work being done intramurally in ORD laboratories.

To further ensure close coordination with the EPA Program Offices and Regions, ORD has created the Research Coordinating Council composed of senior managers and scientists from around the Agency to recommend and review topics selected for research and RFAs.

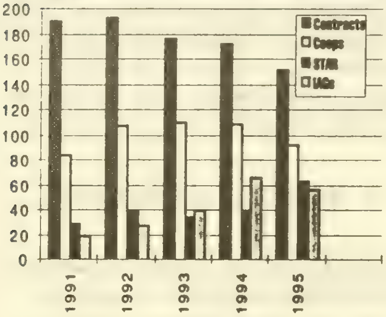
## Relation of the STAR Program to the EPA Laboratories

The STAR program has largely resulted in a realignment of the ORD investment in the academic scientific community, whereby more emphasis is placed on competitively awarded, peer reviewed grants administered by the National Center for Environmental Research and Quality Assurance, and less on cooperative agreements funded through the laboratories. This realignment allows ORD scientists to spend more time at the bench building a stronger in-house program. The STAR program and the in-house program are thus complementary, finding their direction in ORD's Strategic Plan.

The ORD Strategic Plan and the topic-specific Research Plans define the long-term directions of the ORD research program, as well as the immediate research that will be carried out during the next few years. The ORD laboratories then prepare implementation plans that describe the intramural component of the research, and complementary STAR program RFAs are prepared with laboratory assistance.

The largest share of the ORD research dollars goes to support the staffing and in-house research support needs of the ORD laboratories and centers. These intramural programs are supplemented by research and other services funded through cooperative agreements and contracts by the laboratories.

The STAR Program has had little effect on contracts or on staffing in ORD. For many years, ORD used Level-of-Effort contracts to support its intramural research program. About five years ago, the EPA Inspector General, the General Accounting Office, and the Congress questioned the extensive use of these types of contracts in ORD. Consequently, ORD decided to scale back the use of these types of contracts and to more fully support the intramural research program with EPA staff. Since the decision to reduce Level-of-Effort contracts was made, ORD has gone through a "one-time contractor conversion" to convert some of the contract staff positions to EPA staff through an open and competitive process. This change is reflected in the decrease in contracts from FY94 to FY95. In essence, the growth of the STAR program has been accomplished largely through the re-direction of cooperative agreements and inter-agency agreements.



Cumulative Changes in Contracts, Cooperative Agreements, STAR, and InterAgency Agreements (1991 Base)

Actual Expenditures in Contracts, Cooperative Agreements, STAR, and InterAgency Agreements ($s shown in thousands)

| | Contracts | Coops | STAR | IAGs |
|---|---|---|---|---|
| 1991 | [redacted] | [redacted] | [redacted] | [redacted] |
| 1992 | [redacted] | [redacted] | [redacted] | [redacted] |
| 1993 | [redacted] | [redacted] | [redacted] | [redacted] |
| 1994 | [redacted] | [redacted] | [redacted] | [redacted] |
| 1995 | [redacted] | [redacted] | [redacted] | [redacted] |

## Relation of the STAR Program to other Federal Agencies

In addition to meeting the specific mission needs of the EPA, ORD has found that it can significantly enhance the STAR program by funding research jointly with other federal Agencies. This process allows very detailed integration of research across a number of federal agencies, avoids duplication, and results in a more cost-effective approach to meeting Agency goals by leveraging resources across agencies. In 1995, ORD published three RFAs together with the National Science Foundation, and after joint peer review and selection, the two agencies funded research in several areas of common interest. In FY 1996, RFAs were once again published together with the NSF, but in addition, RFAs were published together with the Department of Energy, and the Office of Naval Research.

Topics for requests for assistance under STAR are chosen so as to avoid duplicating the work of other Agencies such as the National Science Foundation and the National Institutes of Health. During Fiscal Year 1995, almost half of the STAR research grants activity was conducted jointly with the NSF --- guaranteeing closely coordinated and non-overlapping use of resources in both Agencies. The other half of the activity focused on environmental topics that fell outside the mission of the NSF and otherwise did not receive substantial attention from NIH or other Agencies. In FY

1996, EPA is increasing its partnerships and is broadening its interactions with other agencies to ensure that STAR funds are leveraged to meet the unique needs of EPA policymakers.

Finally, it must be recognized that the STAR Program also allows EPA to capitalize on people, facilities and funding already in place in outside institutions, thus leveraging past and current investments by others. Rarely does a research grant cover the full cost of a project. In addition, Requests for Applications can be focused quickly on newly identified needs, and grants selected via competitive peer review can be in place within 6-9 months. This meets the spirit of ORD's flexible, streamlined, responsive research approach.

## Conclusion

ORD has embarked on a remarkable series of changes that are meant to upgrade the quality of its research and include the broad academic science community in an enhanced extramural program. These changes are being implemented in accord with the Strategic Plan for ORD. As a part of this plan, ORD has for the first time developed a set of risk-based criteria to use for making decisions about research to be done and the resources to be allocated to such research.

Through the STAR program ORD is committing itself to including the best scientists from the country's universities and non-profit research centers in our research. Through the STAR Program ORD aims to ensure the highest possible science quality in support of EPA decisions. In that part of the STAR Program that is targeted to specific research areas, applicants must propose research in response to specific Requests for Proposals that are developed to provide support to the EPA mission, and that are based on the goals and criteria in the ORD Strategic Plan. Proposals must be of the highest quality, as determined through external peer review by outstanding scientists drawn from throughout the national scientific community.

These changes will, it is hoped, provide a much sounder science base for EPA decisions, and a broad base of science and technology for states, local governments, and others who implement EPA decisions.

## Appendix I

**ORD Response to Blue-Ribbon Panel Recommendations**

| Recommended Action | ORD Response |
|---|---|
| EPA should take steps to improve science quality and enhance peer review.[c,j] | We instituted standard operating procedures for peer review in 1994. |
| | To engage the nation's best research institutions, we expanded our program for extramural research grants selected from competitive, peer-reviewed proposals. |
| | We created a Peer Review Division in our National Center for Environmental Research and Quality Assurance. |
| ORD needs a coherent research-planning process, a robust mission statement, and a vision statement.[c,d,i,j] | We developed the ORD Strategic Plan (this document) and distributed it for comment in November 1995. |
| | We implemented a risk-based research planning process. |
| | We realigned ORD's organizational structure to use risk assessment and risk management as principal priority-setting criteria. |
| ORD should enhance environmental education programs for training the next generation of scientists.[a,d,e] | We initiated an expanded graduate fellowship program initiated, with 100 awards in 1995. |
| ORD should streamline its existing laboratory organization by collapsing the twelve laboratories into four national laboratories [d,f,h] | We consolidated ORD laboratories into three national laboratories and two centers in 1995 to align laboratories according to risk assessment and risk management components. |
| ORD should improve its management systems to track planning resources and accomplishments [g,h] | We are developing the ORD Management Information System to track resources and projects on an ORD-wide basis. |
| | We established a Management Council, a Science Council, and (together with the program offices and regions) a Research Coordination Council (see Appendix C of this Strategic Plan). |
| | We will conduct annual research program reviews to evaluate the status and accomplishments of our research. |
| | We are developing research plans to inform internal and external audiences about the policy relevance, specific objectives, technical approaches, and expected products of our research. |
| ORD should balance short-term and long-term research.[a,e,g,i] | In 1995, we created the Science To Achieve Results (STAR) Program of peer-reviewed investigator-initiated grants relevant to ORD's mission. |
| | As described in this Strategic Plan, we give equal consideration to short- and long-term research needs in our priority-setting process. |
| ORD should balance health and ecological research.[a,c] | We have adopted a balance between ecological risks and human health risks as a major strategic principle (see Table 1 of this Strategic Plan). |
| | We appointed Laboratory Associate Directors for Health and Ecology for each national laboratory. |
| EPA should designate ORD's Assistant Administrator (AA/ORD) as the Agency's Chief Scientific Officer.[j] | The EPA Deputy Administrator appointed the AA/ORD as EPA's Scientific and Technical Activities Planner in March 1995. |
| EPA must improve its capability to anticipate environmental problems.[a-c] | EPA signed an agreement in 1995 with the National Research Council to establish a group to review environmental issues for the next decade and recommend necessary research. |

[a] *Future Risk: Research Strategies for the 1990s*. U.S. EPA, Science Advisory Board. 1988.

[b] *Reducing Risks: Setting Priorities and Strategies for Environmental Protection.* U.S. EPA, Science Advisory Board. 1990.

[c] *Safeguarding the Future: Credible Science, Credible Decisions.* Report of the Expert Panel on the Role of Science at EPA. U.S. EPA. 1992.

[d] *Environmental Research and Development: Strengthen the Federal Infrastructure.* The Carnegie Commission. 1992.

[e] *Research to Protect, Restore, and Manage the Environment.* National Research Council. 1993.

[f] *Assessment of the Scientific and Technical Laboratories and Facilities of the U.S. EPA.* MITRE Corporation. May 1994.

[g] *An SAB Report: Review of the MITRE Corp. Draft Report on the EPA Laboratory Study.* U.S. EPA, Science Advisory Board/Research Strategy Advisory Council. May 1994.

[h] *A Review, Evaluation and Critique of a Study of EPA Laboratories by the MITRE Corporation and Additional Commentary on EPA Science and Technology Programs.* National Academy of Public Administration. June 1994.

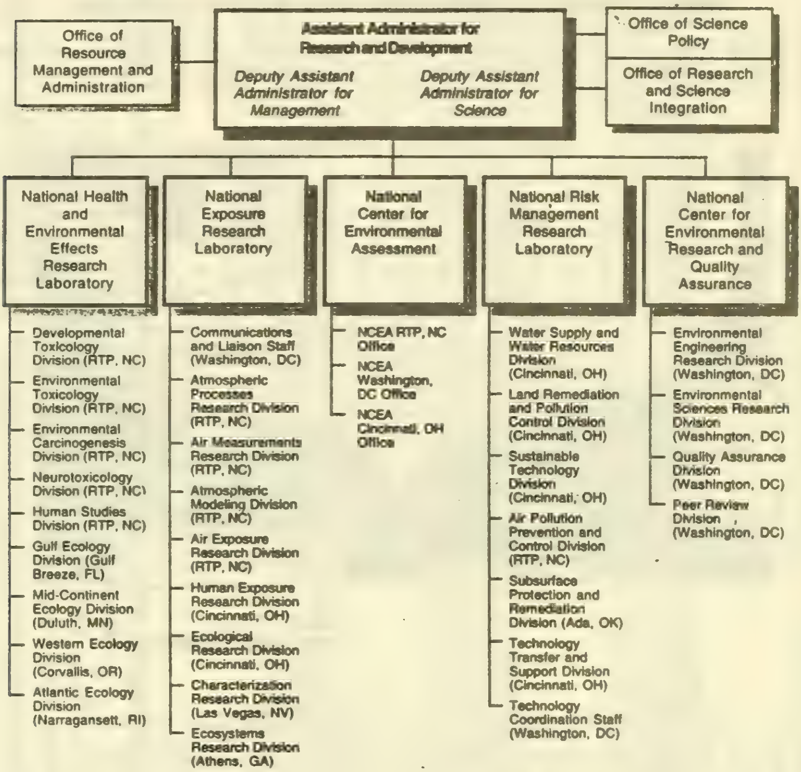
[i] *Setting Priorities, Getting Results: A New Direction for EPA.* National Academy of Public Administration. April 1995.

[j] *Interim Report of the Committee on Research and Peer Review in EPA.* National Research Council. March 1995.

Appendix 2

**New Risk-Based Organization**

# The Office of Research and Development Organization



**Assistant Administrator for Research and Development**
*Deputy Assistant Administrator for Management*
*Deputy Assistant Administrator for Science*

Office of Resource Management and Administration

Office of Science Policy

Office of Research and Science Integration

**National Health and Environmental Effects Research Laboratory**

- Developmental Toxicology Division (RTP, NC)
- Environmental Toxicology Division (RTP, NC)
- Environmental Carcinogenesis Division (RTP, NC)
- Neurotoxicology Division (RTP, NC)
- Human Studies Division (RTP, NC)
- Gulf Ecology Division (Gulf Breeze, FL)
- Mid-Continent Ecology Division (Duluth, MN)
- Western Ecology Division (Corvallis, OR)
- Atlantic Ecology Division (Narragansett, RI)

**National Exposure Research Laboratory**

- Communications and Liaison Staff (Washington, DC)
- Atmospheric Processes Research Division (RTP, NC)
- Air Measurements Research Division (RTP, NC)
- Atmospheric Modeling Division (RTP, NC)
- Air Exposure Research Division (RTP, NC)
- Human Exposure Research Division (Cincinnati, OH)
- Ecological Research Division (Cincinnati, OH)
- Characterization Research Division (Las Vegas, NV)
- Ecosystems Research Division (Athens, GA)

**National Center for Environmental Assessment**

- NCEA RTP, NC Office
- NCEA Washington, DC Office
- NCEA Cincinnati, OH Office

**National Risk Management Research Laboratory**

- Water Supply and Water Resources Division (Cincinnati, OH)
- Land Remediation and Pollution Control Division (Cincinnati, OH)
- Sustainable Technology Division (Cincinnati, OH)
- Air Pollution Prevention and Control Division (RTP, NC)
- Subsurface Protection and Remediation Division (Ada, OK)
- Technology Transfer and Support Division (Cincinnati, OH)
- Technology Coordination Staff (Washington, DC)

**National Center for Environmental Research and Quality Assurance**

- Environmental Engineering Research Division (Washington, DC)
- Environmental Sciences Research Division (Washington, DC)
- Quality Assurance Division (Washington, DC)
- Peer Review Division (Washington, DC)

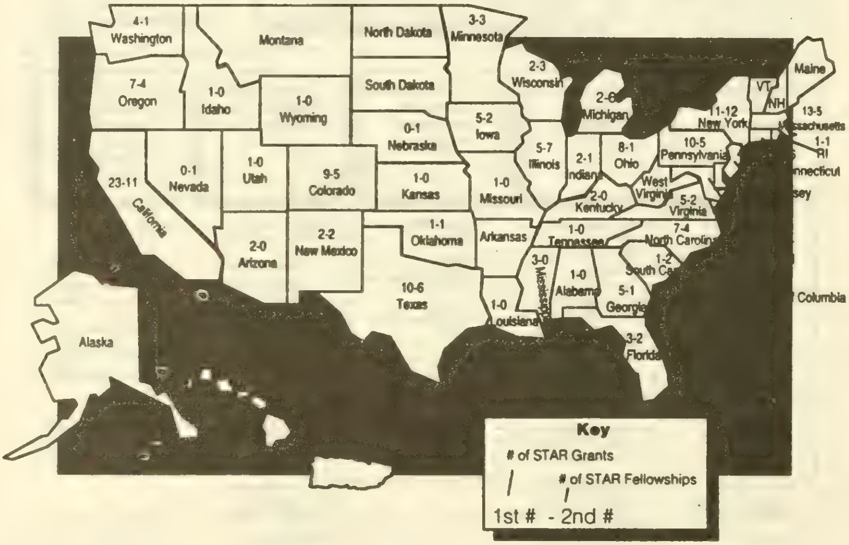
Appendix 3

**ORD's New Grant* and Fellowship Awards by State**

# FY95 STAR Program

## Office of Research and Development

## National Center for Environmental Research and Quality Assurance



STAR grant awards for FY95, 172 (new), $33,022,847 million

STAR fellowship awards FY95, 100 (new), $2,993,071 million

*New awards refer to grant applications awarded for the first time in this fiscal year, FY 95. The numbers shown above do not include awarded grants now in their second or third year.

# US EPA Graduate Fellowship Awards for the 1995-1996 Academic Year

*National Center for Environmental Research and Quality Assurance*

OFFICE OF RESEARCH AND DEVELOPMENT - WASHINGTON D.C. 20460

| UNIVERSITY | EPA FELLOW | DEPARTMENT | DISCIPLINE | DEGREE SOUGHT |
|---|---|---|---|---|
| Buffalo, U. of | DiTommaso, Jill E. | Department of Civil Engineering | Engineering | MS |
| California State University | Ellison, Homer 0. | Department of Biological Sciences | Ecology | MS |
| California, U. of, Berkeley | Schuher, Andrew J. | Department of Civil Engineering | Engineering | Ph.D. |
| California, U. of, Berkeley | Holzberg, Steven P. | Department of Environmental Science, Policy and Mgmt. | Health | Ph.D. |
| California, U. of, Berkeley | Boyd, William C. | Energy and Resources Group | Social Sciences | Ph.D. |
| California, U. of, Davis | Loge III, Frank J. | Department of Civil and Environmental Engineering | Engineering | Ph.D. |
| California, U. of, Irvine | Pearson, Alison C. | Department of Community and Environmental Medicine | Health | Ph.D. |
| California, U. of, Riverside | Dobo, Krista L. | Environmental Toxicology Graduate Program | Health | Ph.D. |
| California, U. of, San Diego | Francis, Christopher A. | Scripps Institute of Oceanography | Ecology | Ph.D. |
| California, U. of, Santa Barbara | Evens, Terence J. | Department of Biology | Ecology | Ph.D. |
| Carnegie Mellon University | Chess, Karen L. | Department of Mechanical Engineering | Engineering | Ph.D. |
| Carnegie Mellon University | Welch, Edward S. | Department of Social and Decision Sciences | Social Sciences | Ph.D. |
| Chicago, U. of | Myers, Tanya L. | Department of Chemistry | Chemistry | Ph.D. |
| Chicago, U. of | Shonle, Irene K. | Department of Ecology and Evolution | Ecology | Ph.D. |
| Chicago, U. of | Mendelsohn, Betsy T. | Department of History | Social Sciences | Ph.D. |
| Cincinnati, U. of | Blasio, Christopher J. | Department of Environmental Health | Earth | MS |
| Clarkson University | Marsteiner II, Edward L. | Department of Civil and Environmental Engineering | Engineering | MS |
| Clarkson University | Payne, Tamara H. | Department of Mathematical Sciences | Mathematics | MS |
| Colorado State University | Brechtel, Fredrick J. | Department of Atmosphere Science | Earth | Ph.D. |
| Colorado State University | Champlin, Tory L. | Department of Civil Engineering | Engineering | Ph.D. |
| Colorado, U. of | Carson, Katherine S. | Department of Economics | Social Sciences | MA |
| Colorado, U. of | Miller, John B. | Department of Chemistry | Chemistry | Ph.D. |
| Colorado, U. of | Bowling, David R. | Dept. of Environ., Population, and Organismic Biology | Earth | Ph.D. |
| Connecticut, U. of | Goldstein, Paul Z. | Department of Ecology and Evolutionary Biology | Ecology | Ph.D. |
| Connecticut, U. of | Rolfhus, Kristofer R. | Department of Marine Science | Earth | Ph.D. |
| Connecticut, U. of | Craddock, Cheryl L. | Department of Ecology and Evolutionary Biology | Ecology | Ph.D. |
| Cornell University | Carpi, Anthony | Field of Environmental Toxicology | Chemistry | MS |
| Cornell University | Brown, Geoffrey A. | Department of Soil, Crop, and Atmospheric Science | Chemistry | Ph.D. |
| Cornell University | Glueck, Susan B. | Department of Entomology | Ecology | Ph.D. |

# US EPA Graduate Fellowship Awards for the 1995-1996 Academic Year

*National Center for Environmental Research and Quality Assurance*

OFFICE OF RESEARCH AND DEVELOPMENT - WASHINGTON D.C. 20460

| UNIVERSITY | EPA FELLOW | DEPARTMENT | DISCIPLINE | DEGREE SOUGHT |
|---|---|---|---|---|
| Cornell University | Sobozak, William V. | Department of Ecology and Systematics | Ecology | Ph.D. |
| Cornell Univer ity | Nelson, Yarrow M. | School of Civil and Environmental Engineering | Engineering | Ph.D. |
| Cornell University | VanderGheynst, Jean S. | Department of Agricultural and Biological Engineering | Engineering | Ph.D. |
| Cornell University | Bayer, Lorna E. | Department of Psychology | Social Sciences | Ph.D. |
| Duke University | Andrews, Jeffrey A. | Department of Botany | Ecology | Ph.D. |
| Duke University Medical Center | Reuther, Gary W. | Department of Pharmacology | Health | Ph.D. |
| Florida State University | Byrd, Tracy C. | Department of Geology | Earth | MS |
| Florida, U. of | Crain, David A. | Department of Zoology | Ecology | Ph.D. |
| Georgia, U. of | Schoeffner, Daniel J. | Department of Pharmacology and Toxicology | Health | Ph.D. |
| Illinois, U. of, Chicago | Kenski, Donna M. | Environmental and Occupational Health Sciences | Chemistry | Ph.D. |
| Illinois, U. of, Urbana | Brent, Robert N., | Department of Civil Engineering | Ecology | MS |
| Illinois, U. of, Urbana | Dillner, Ann M. | Department of Civil Engineering | Engineering | Ph.D. |
| Indiana University | Schmucker, Mary B. | School of Public and Environmental Affairs | Social Sciences | MS |
| Iowa State University | Simmons, Carol L. | Department of Entomology | Ecology | MS |
| Iowa State University | Kruger, Ellen L. | Department of Entomology | Health | Ph.D. |
| Johns Hopkins University | Ehlers, Laura J. | Department of Geography and Environmental Engineering | Engineering | Ph.D. |
| Maryland, U. of, College Park | Warner, Kimberly A. | Marine, Estuarine and Environmental Sciences Program | Ecology | Ph.D. |
| Massachusetts Institute of Technology | Zhang, Jie | Department of Earth, Planetary and Atmospheric Sciences | Earth | Ph.D. |
| Massachusett Institute of Technology | Hart, Constance A. | Department of Biology | Ecology | Ph.D. |
| Massachusetts Institute of Technology | Adamkiewicz, Gary | Department of Chemical Engineering | Engineering | Ph.D. |
| Massachusetts Institute of Technobgy | Hamilton, James A. | Department of Civil and Environmental Engineering | Social Sciences | S.M. |
| Massachusetts, U. of | Pines, David S. | Department of Civil and Environmental Engineering | Engineering | Ph.D. |
| Michigan State University | Yavich, Aleander A. | Department of Civil and Environmental Engineering | Engineering | MS |
| Michigan State University | Tay, Eugene Michael | Program in Epidemiology | Health | MS |
| Michigan, U. of, Ann Arbor | Kibbey, Tohren C. | Department of Civil and Environmental Engineering | Engineering | MS |
| Michigan, U. of, Ann Arbor | Li, Susanna P. | Department of Civil and Environmental Engineering | Engineering | MS |
| Michigan, U. of, Ann Aroor | McEuen, Amy B. | School of Natural Resources and Environment | Ecology | Ph.D. |
| Michigan, U. of, Ann Arbor | Santoro, Nicholas | Department of Biological Chemistry | Health | Ph.D. |
| Minnesota, U. of | Cronlund, Sarah L. | Department of Ecology, Evolution, and Behavior | Ecology | MS |

# US EPA Graduate Fellowship Awards for the 1995-1996 Academic Year

*National Center for Environmental Research and Quality Assurance*

OFFICE OF RESEARCH AND DEVELOPMENT - WASHINGTON D.C. 20460

| UNIVERSITY | EPA FELLOW | DEPARTMENT | DISCIPLINE | DEGREE SOUGHT |
|---|---|---|---|---|
| Minnesota, U. of | Reinke, Patricia H. | Department of Environmental and Occupational Health | Earth | Ph.D. |
| Minnesota U. of | Otterson, Julie R. | Department of Ecology Evolution and Behavior | Ecology | Ph.D. |
| Nebraska-Lincoln, U. of | Raschko-Mueller, Jennifer L. | Department of Mathematics and Statistics | Mathematics | Ph.D. |
| Nevada, U. of, Reno | Marchand, Eric A. | Department of Civil Engineering | Engineering | MS |
| New Mexico Highlands University | Presley, Richard W. | Department of Chemistry | Chemistry | MS |
| New Mexico State University | Strand, Allan E. | Department of Biology | Ecology | Ph.D. |
| New York University Medical Center | Matheson, Joanna M. | Program of Environmental Health Science | Health | Ph.D. |
| North Carolina State University | Penmetsa, Phanendrakumar V. | Department of Toxicology | Ecology | Ph.D. |
| North Carolina, U. of, Chapel Hill | Raynor, Peter, C. | Department of Environmental Sciences and Engineering | Engineering | Ph.D. |
| Northwestern University | Wade-Benzoni, Kimberly A. | Department of Organizational Behavior | Social Sciences | Ph.D. |
| Oklahoma, U. of | Pearce, Terri A. | Department of Pharmacology and Toxicology | Health | Ph.D. |
| Oregon State University | Spicer, Rachel | Department of Forest Products and Forest Science | Ecology | MS |
| Oregon State Universty | Hairston, Anne B. | Department of Forest Engineering | Earth | Ph.D. |
| Oregon State University | Scheck, Heather J. | Department of Botany and Plant Pathology | Ecology | Ph.D. |
| Oregon State University | Purdy, Kathleen G. | Department of Statistics | Mathematics | Ph.D. |
| Pennsylvania State University | Parson, Shane C. | Department of Agricultural and Biobgical Engineering | Engineering | MS |
| Pittsburgh, U. of | Guelcher, Scott A. | Department of Chemical Engineering | Engineering | MS |
| Pittsburgh, U. of | Goldman, Radoslav | Department of Environmental and Occupational Health | Health | Ph.D. |
| Rhode Island, U. of | Audette, Charles T. | Department of Botany | Ecology | MS |
| Rice University | Bradford, John H. | Department of Geology and Geophysics | Earth | MA |
| Rice University | Lahsen, Myanna H. | Department of Anthropology | Social Sciences | Ph.D. |
| Rutgers University | Dey, Markus P. | Department of Pharmacology and Toxicology | Health | Ph.D. |
| Rutgers University | Hamel, Stephanie L. | Exposure Measurement and Assessment Division | Health | Ph.D. |
| South Carolina, U. of | Schelkat, Christian E. | Department of Environmental Health Sciences | Ecology | Ph.D. |
| Stanford University | Abrams, Robert H. | Department of Geology and Environmental Science | Earth | Ph.D. |
| Stanford University | Ziegler, Alan D. | Department of Geological and Environmental Sciences | Earth | Ph.D. |
| Stanford University | Cunningham, Jeffrey A. | Department of Civil Engineering | Engineering | Ph.D. |
| SUNY at Buffalo | Russell, Kevin T. | Department of Civil Engineering | Engineering | MS |
| SUNY at Stony Brook | Griscom, Sarah B. | Marine Sciences Research Center | Ecology | Ph.D. |

# US EPA Graduate Fellowship Awards for the 1995-1996 Academic Year

*National Center for Environmental Research and Quality Assurance*

OFFICE OF RESEARCH AND DEVELOPMENT - WASHINGTON D.C. 20460

| UNIVERSITY | EPA FELLOW | DEPARTMENT | DISCIPLINE | DEGREE SOUGHT |
|---|---|---|---|---|
| Texas A&M University | Wells, Mona C. | Department of Chemistry | Chemistry | Ph.D. |
| Texas, U. of, Austin | Boughton, David A. | Department of Zoology | Ecology | Ph.D. |
| Texas, U. of, Austin | Williamson, Derek G. | Department of Civil Engineering | Engineering | Ph.D. |
| Texas, U. of, Dallas | Gamble, Janet L. | School of Social Sciences | Health | Ph.D. |
| Virginia Poly. Tech. Institute | Diz, Harry R. | Department of Civil Engineering | Engineering | Ph.D. |
| Washington State University | Call, Douglas R. | Department of Zoology | Ecology | Ph.D. |
| William and Mary, College of | Chasey, Michael L. | Department of Physical Sciences | Chemistry | MS |
| Wisconsin, U. of, Madison | Holloway, Susan A. | Water Chemistry Program | Chemistry | Ph.D. |
| Wisconsin, U. of, Madison | Fisher, Janet M. | Department of Zoology | Ecology | Ph.D. |
| Wisconsin, U. of, Madison | Ripp, Sharon L. | Environmental Toxicology Center | Health | Ph.D. |
| Yale University | Beard, Karen H. | School of Forestry and Environmental Sciences | Ecology | MS |
| Yale University | Kull, Christian A. | School of Forestry and Environmental Studies | Earth | Ph.D. |
| Yale University | Meyerson, Frederick A. | Schod of Forestry and Environmental Studies | Ecology | Ph.D. |

# 1995 US EPA Research Grant Awards by Request for Application (RFA) Topic

*National Center for Environmental Research and Quality Assurance*
OFFICE OF RESEARCH AND DEVELOPMENT - WASHINGTON D.C. 20460

## AIR POLLUTANTS

EPA Contact: Deran Pashayan 202-260-2606

| Principal Investigator<br>Department/Institution | Grant Title | Funding($)/<br>Project Period |
|---|---|---|
| **Harvey E. Jeffries**<br>Dept. of Environmental Sciences & Engineering<br>*Univ. of North Carolina (NC)* | Mechanistic Studies of Isoprene and Aromatic Hydrocarbons | **450,000/3** |
| **Lester Kobzik**<br>School of Public Health<br>*Harvard Univ. (MA)* | Cellular Mechanisms of Pulmonary Inflammation by Environmental Particles | **546,895/3** |
| **Beverly S. Cohen**<br>Inst. of Environmental Medicine<br>*New York Univ. Medical Center (NY)* | Distribution of H+ and Trace Metals in Ultrafine Ambient Aerosol | **589,560/3** |
| **Jana B. Milford**<br>Dept. of Mechanical Engineering<br>*Univ. of Colorado-Boulder (CO)* | Quantification of Uncertainty in Air Quality Models used for Analysis of Ozone Control Strategies | **426,223/3** |
| **Spyros N. Pandis**<br>Dept. of Chemical Engineering<br>*Carnegie Mellon Univ. (PA)* | Development and Testing of a State-Of-The-Art PMx Particulate Module for Regional and Urban Photochemical Models | **412,041/3** |
| **Gregory J. McRae**<br>Dept. of Chemical Engineering<br>*Massachusetts Inst. of Technology (MA)* | Advanced Infrared Laser Remote Sensing Techniques to Monitor On-Road NOx Emissions from Motor Vehicles | **374,080/3** |

## HUMAN HEALTH RISK ASSESSMENT

EPA Contact: Clyde Bishop 202-260-5727

| Principal Investigator<br>Department/Institution | Grant Title | Funding($)/<br>Project Period |
|---|---|---|
| **Frederic Y. Bois**<br>Lawrence Berkeley Lab.<br>*Univ. of California (CA)* | Physiologically-Based Population Pharmacokinetic Models for Risk Assessment | 68,633/1 |
| **Ian L. Pepper**<br>Dept. of Soil & Water Sciences<br>*Univ. of Arizona (AZ)* | PCR Based Detection of Cytopathogenic and Non-cytopathogenic Viruses in Water | 227,258/3 |
| **Louise M. Ryan**<br>School of Public Health<br>*Harvard Univ. (MA)* | Statistical Methods for Non-Cancer Risk Assessment | 386,267/3 |
| **Patricia M. Rodier**<br>Dept. of Obstetrics & Gynecology<br>*Univ. of Rochester (NY)* | Role of Developmental Neurotoxicity in Autism | 629,456/3 |
| **Hebert L. Dupont**<br>School of Public Health<br>*Univ. of Texas, Health Science Center (TX)* | Virulence Factors of Geographically Diverse Cryptosporidium and Infective Dose in Humans | 550,323/3 |
| **Louis J. Guillette**<br>Dept. of Zoology<br>*Univ. of Florida (FL)* | Contaminant-Induced Changes in Hepatic Steroid Hormone Degradation | 407,679/3 |
| **Brenda Eskenazi**<br>School of Public Health<br>Univ. California-Berkeley (CA) | Endometriosis and Dioxin Exposure of Females of Seveso | 426,554/3 |
| **Suresh H. Moolgavkar**<br>Public Health Sciences Division<br>*Fred Hutchinson Cancer Research Center (WA)* | Biologically-Based Dose Response Model for Cancer Risk Assessment | 387,615/3 |

## INDOOR AIR QUALITY IN LARGE OFFICE BUILDINGS

EPA Contact: Deran Pashayan 202-260-2606

| Principal Investigator Department/Institution | Grant Title | Funding($)/ Project Period |
|---|---|---|
| **Stephen J. Reynolds**<br>Dept. of Preventive Medicine & Environmental Health<br>*Univ. of Iowa (IA)* | Indoor Air Quality in Large Office Buildings in the Midwest | 635,257/3 |
| **John D. Spengler**<br>School of Public Health<br>*Harvard Univ. (MA)* | A Study of Ozone Concentration Gradients in Large Buildings Including an Examination of Indoor Chemistry, Ventilation, Occupant Health Effects and Effects on HVAC Systems | 425,708/3 |
| **Harriet A. Burge**<br>School of Public Health<br>*Harvard Univ. (MA)* | Bioaerosols, Health and Productivity in a Large Office Building | 439,035/3 |

## REGIONAL HYDROLOGIC VULNERABILITY TO GLOBAL CLIMATE CHANGE

EPA Contact: Barbara Levinson 202-260-5983

| Principal Investigator Department/Institution | Grant Title | Funding($)/ Project Period |
|---|---|---|
| **Heinz G. Stefan**<br>Dept. of Civil Engineering<br>*Univ. of Minnesota (MN)* | Alteration of Water Availability, Water Quality, and Fish Habitat in Cold Regions by Climatic Change | 300,000/3 |
| **Dennis P. Lettenmaier**<br>Dept. of Civil Engineering<br>*Univ. of Washington (WA)* | Improved Methods for Assessment of Hydrologic Vulnerability to Climate Change | 463,762/3 |
| **L. Ruby Leung**<br>Atmospheric Processes Group<br>*Battelle Pacific Northwest Laboratory (WA)* | The Influence of Global Climate Change on Mountain Water Resources | 500,000/3 |

| | | |
|---|---|---|
| **J. Wayland Eheart**<br>Dept. of Civil Engineering<br>*Univ. of Illinois-Urbana (IL)* | Vulnerability of Water Resources to Global Climatic Change in the Agricultural Mid-West -- Ecological, Economic, and Regulatory Aspects | 380,610/3 |
| **Kris Wernstadt**<br>Quality of the Environment Division<br>*Resource for the Future (DC)* | The Vulnerability of Low Income Households to the Hydrologic Effects of Climate Change | 440,000/3 |
| **David R. DeWalle**<br>Environmental Resources Research Inst.<br>*Pennsylvania State Univ. (PA)* | Regional Streamflow Sensitivity to Climate Change in an Urbanizing Environment | 120,000/3 |
| **Brenton M. Yarnal**<br>Dept. of Geography<br>*Pennsylvania State Univ. (PA)* | Regional Hydrologic Vulnerability and Adaptation to Climate: An Integrated Assessment of the Susquehanna River Basin | 460,000/3 |

## INCENTIVES AND IMPEDIMENTS TO POLLUTION PREVENTION

EPA Contact: Gregory Ondich 202-260-5747

| Principal Investigator Department/Institution | Grant Title | Funding($)/ Project Period |
|---|---|---|
| **Kathy Heller**<br>Center for Economics Research<br>*Research Triangle Inst. (NC)* | Encouraging Innovation Through Umbrella Permitting | 239,998/2 |
| **Robert Gottlieb**<br>Lewis Center for Regional Policy Studies<br>*Univ. of California-Los Angeles (CA)* | Evaluation and Demonstration of Wet Cleaning Alternatives to Perchloroethylene-Based Garment Care | 75,008/2 |
| **Joan Mahon**<br>Graduate School of Management<br>*Rutgers Univ.-Piscataway (NJ)* | Demanufacturing Partnership Program Located at Rutgers University - Newark | 200,000/2 |
| **Kevin Rackstraw**<br>*American Wind Energy Assoc. (DC)* | Wind Energy Assessment in China | 159,922/2 |

| | | |
|---|---|---|
| **Don Fullerton**<br>Dept. of Economics<br>*Univ. of Texas-Austin (TX)* | A Framework to Compare Policies for Source Reduction | 88,784/2 |
| **Sara Clement**<br>*Inst. of Advanced Manufacturing Sciences (OH)* | Pollution Prevention Technology Transfer for the Printing Industry | 259,284/2 |
| **Craig Diamond**<br>National Sanitation<br>*Foundation International (MI)* | Encouraging Industry Environmental Technology Innovation Through the Implementation of Environmental Management Systems | 187,802/2 |
| **Albert C. Gray**<br>*Water Environment Federation (VA)* | Preparation of Pollution Prevention and Socio-economic Monographs Using the EPA Common Sense Initiative and the Design for the Environment Program | 100,000/2 |
| **Thomas Bierma**<br>Dept. of Health Sciences<br>*Illinois State Univ., Normal (IL)* | P2 Incentive Contracts: Enhancing Diffusion of P2 Technologies in the Metal Plating Industry | 199,964/2 |
| **Lawrence Boyd**<br>NIST Great Lakes Manufacturing Technology Center<br>*Cleveland Advanced Manufacturing Program (OH)* | Pollution Prevention Assistance in Automotive Supply Chain | 245,000/2 |
| **Randall D. Forsythe**<br>Dept. of Geography & Earth Sciences<br>*Univ. of North Carolina-Charlotte (NC)* | Development of Model Pollution Prevention Diffusion Partnership for Small Business | 180,000/1 |
| **Mark Sharfman**<br>College of Business Administration<br>*Univ. of Oklahoma-Norman, Norman (OK)* | Regulation, Business, and Sustainable Development: The Management of Environmentally Conscious Technological Innovation Under Alternative Market Conditions | 244,955/2 |
| **Karen Holmes**<br>*International Inst. For Energy Conservation (DC)* | Accessing Overseas Markets: Energy Efficiency and Appliance Labelling in Asia and Latin America | 240,000/2 |
| **Jonathan Bair**<br>Maryland Center for Environmental Training<br>*Charles County Community College (MD)* | Provide P2 Technical Assistance Training Literature and Videos to Small and Medium-Sized Business in Key Waste Generating Sectors | 119,824/1 |

| | | |
|---|---|---|
| **Terri Goldberg**<br>*Northeast Waste Management Officials' Assoc. (MA)* | Pollution Prevention Information Dissemination Printing Project | 160,000/2 |
| **Daryl Ditz**<br>*World Resources Inst. (DC)* | Policy Frameworks to Stimulate Environmental Technology in the Computer and Electronics Sectors | 240,000/2 |
| **Barry Bozeman**<br>School of Public Policy<br>*Georgia Inst. Of Technology (GA)* | Assessing Compliance Burden from Implementation of CAAA Title V Permitting Rules and Regulations | 240,000/2 |
| **Alfred Marcus**<br>Strategic Management Research Center<br>*Univ. of Minnesota-Minneapolis (MN)* | Advising, Monitoring, and Evaluating a Minnesota Pollution Control Agency Pilot Project for Flexible, Multi-Media Permitting | 255,000/2 |

## TECHNOLOGY FOR A SUSTAINABLE ENVIRONMENT

EPA Contact: Gregory Ondich 202-260-5747

| **Principal Investigator Department/Institution** | **Grant Title** | **Funding($)/ Project Period** |
|---|---|---|
| **Leo Paquette**<br>Dept. of Chemistry<br>*Ohio State Univ. (OH)* | Opportunities Offered by Indium-Promoted Carbon Bond Forming Reactions in Water | 300,000/2 |
| **Douglas C. Cameron**<br>Dept. of Chemical Engineering<br>*Univ. of Wisconsin (WI)* | Fermentation of Sugars to 1,2 Propanediol by Clostridium thermosaccharolyticum | 160,000/2 |
| **Mary Rezac**<br>Dept. of Chemical Engineering<br>*Georgia Tech (GA)* | High-Yield Membrane Reactors | 269,999/3 |
| **Robert Sievers**<br>Cooperative Inst. For Research in Environmental Sciences<br>*Univ. of Colorado-Boulder (CO)* | Replacement of Organic Solvents by Carbon Dioxide for Forming Aerosols in Coating Processes | 200,000/2 |

| | | |
|---|---|---|
| **Bala Subramaniam**<br>Dept. of Chemical & Petroleum Engineering<br>*Univ. of Kansas (KS)* | Coking and Activity of Solid-Acid Alkylation in Supercritical Reaction Media | 220,000/3 |
| **Alan Russell**<br>Chemical & Petroleum Engineering Dept.<br>*Univ. of Pittsburgh (PA)* | Biocatalyst of Polymers in Carbon Dioxide | 150,000/3 |
| **Joan Brennecke**<br>Chemical Engineering Dept.<br>*Univ. of Notre Dame (IN)* | Phase Equilibria of CO2-Based Reaction Systems | 100,000/2 |

## VALUATION AND ENVIRONMENTAL POLICY

EPA Contact: Gregory Ondich 202-260-5747

| Principal Investigator<br>Department/Institution | Grant Title | Funding($)/<br>Project Period |
|---|---|---|
| **Nicholas E. Flores**<br>Dept. of Economics<br>*Univ. of Colorado-Boulder (CO)* | Environmental Values and National Economic Accounts: A Theoretical Inquiry | 43,395/1 1/2 |
| **David S. Brookshire**<br>Dept. of Economics<br>*Univ. of New Mexico (NM)* | Preference Formation and Elicitation in Valuing Non-Market Goods | 184,998/2 |
| **Carol A. Mansfield**<br>School of the Environment<br>*Duke Univ. (ND)* | Improving Willingness to Accept Responses Using Alternative Forms of Compensation | 51,402/1 1/2 |
| **William Schulze**<br>Dept. of Agricultural, Resource & Managerial Economics<br>*Cornell Univ (NY)* | Can Contingent Valuation Measure Passive Use Values | 381,150/2 |

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| **Thomas Dietz**<br>Dept. of Sociology & Anthropology<br>*George Mason Univ. (VA)* | Social Psychology of Stated Preference | 179,990/2 |
| **Richard T. Carson**<br>Dept. of Economics<br>*Univ. of California-San Diego (CA)* | Comparative Studies of Approaches Eliciting Economic Values | 265,000/2 |
| **Clifford S. Russell**<br>Dept. of Economics<br>*Vanderbilt Univ. (TN)* | Innovations in the Valuation of Ecosystems: A Forest Application | 139,327/2 |
| **Graham Davis**<br>Dept. of Economics & Business<br>*Colorado School of Mines (CO)* | Valuing the Stock and Flow of Mineral and Renewable Assets in National Income Accounting | 101,000/2 |
| **Baruch Fischoff**<br>Dept. of Social & Decision Sciences<br>*Carnegie Mellon Univ. (PA)* | Eliciting Environmental Values: A Constructivist Approach | 99,987/2 |
| **Gordon Rausser**<br>Dept. of Agricultural & Resource Economics<br>*Univ. of California-Berkeley (CA)* | Deriving Biodiversity Option Value Within a Model of Biotechnology Research and Development | 80,000/2 |
| **James J. Opaluch**<br>Dept. of Resource Economics<br>*Univ. of Rhode Island (RI)* | Developing Conjoint Stated Methods for Valuation of Environmental Resources Within Their Ecological Context | 125,972/2 |
| **Ronald G. Cummings**<br>Policy Research Center<br>*Georgia State Univ. (GA)* | Valuing Environmental Damages With Stated Preference Methods: New Approaches that Yield Demonstrably Valid Values for Non-Priced, Environmental Goods | 113,856/1 |
| **Alan Krupnick**<br>*Resources for the Future (DC)* | Mortality Risk Evaluation and Stated Preference Methods: An Experimental Study | 114,822/1 |

## WATER AND WATERSHEDS

EPA Contact. Barbara Levinson 202-260-5983

| Principal Investigator Department/Institution | Grant Title | Funding($)/ Project Period |
|---|---|---|
| **Robert Costanza**<br>Chesapeake Biological Lab.<br>*Univ. of Maryland (MD)* | Integrated Ecological Economic Modeling and Valuation of Watersheds | 1,000,000/3 |
| **Linda A. Deegan**<br>Ecosystems Center<br>*Marine Biological Lab. (MA)* | Tracing the Fate of Nitrogen Inputs from Watersheds to Estuaries | 230,000/2 |
| **David L. Freyberg**<br>Dept. of Civil Engineering<br>*Stanford Univ. (CA)* | Diffusion Rate Limitations in Heterogeneous Porous Media: Model Structure, Scale and Ecologic Characterization | 198,0003/3 |
| **Steven I. Gordon**<br>Dept. of City and Regional Planning<br>*Ohio State Univ. (OH)* | Integrated Planning, Forecasting, and Watershed Level Ecological Risk Assessment Techniques: A Test in the Eastern Cornbelt Plains Ecoregion of Ohio | 445,500/3 |
| **Stanley B. Grant**<br>Dept. of Civil & Environmental Engineering<br>*Univ. of California-Irvine (CA)* | Norwalk Virus-like Particles (VLPs) for Studying Natural Groundwater Disinfection<br>*(in collaboration with Mary Estes, see next page)* | 627,067/3 |
| **Nelson G. Hairston**<br>Section of Ecology & Systematics<br>*Cornell Univ. (NY)* | The Role of Long-lived Zooplankton Diapausing Eggs Response and Recovery of Impacted Lakes | 350,000/3 |
| **George M. Hornberger**<br>Dept. of Environmental Sciences<br>*Univ. of Virginia (VA)* | The Role of Colloidal Particles in the Transport of Chemicals Through an Agricultural Watershed | 500,000/3 |

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|---|---|---|
| **Hiram W. Li**<br>Dept. of Fisheries & Wildlife<br>*Oregon State Univ. (OR)* | Geomorphic, Hydrologic and Ecological Connectivity in Columbia River Watersheds: Implications for Endangered Salmonids *(in collaboration with Patricia F. McDowell, next entry)* | 754,863/3 |
| **Patricia F. McDowell**<br>Dept. of Geography<br>*Univ. of Oregon (OR)* | Geomorphic, Hydrological and Ecological Connectivity in Columbia River Watersheds: Implications for Endangered Salmonids *(in collaboration with Hiram W. Li, above entry)* | 136,100/3 |
| **Mary C. K. Estes**<br>Division of Molecular Biology<br>*Baylor College of Medicine (TX)* | Norwalk Virus-like Particles (VLPs) for Studying Natural Groundwater Disinfection<br>*(in collaboration with Stanley B. Grant, see previous page)* | 72,933/3 |
| **David E. Lincoln**<br>Dept. of Biological Sciences<br>*Univ. of South Carolina (SC)* | Resistance of Communities to Chronic Haloaromatic Contamination by Biogenic and Anthropogenic Sources | 465,300/3 |
| **Judith L. Meyer**<br>Inst. of Ecology<br>*Univ. of Georgia (GA)* | Influences of Watershed Land Use on Stream Ecosystem Structure and Function | 500,000/3 |
| **Francois M. M. Morel**<br>Dept. of Geological & Geophysical Sciences<br>*Princeton Univ. (NJ)* | The Role of Hg (II) Reduction and Chemical Speciation in Controlling the Concentration of Mercury and its Methylation in Natural Waters | 349,950/3 |
| **Gary Parker**<br>St. Anthony Falls Hydraulic Lab.<br>*Univ. of Minnesota (MN)* | Formation and Propagation of Large-Scale Sediment Waves in Periodically Disturbed Mountain Watersheds | 280,000/3 |
| **Carlos E. Puente**<br>Land, Air & Water Resources Hydrologic Science Program<br>*Univ. of California-Davis (CA)* | Modeling Temporal Rainfall Via a Fractal Geometric Approach | 198,000/3 |
| **Edella C. Schlager**<br>School of Public Administration & Policy<br>*Univ. of Arizona (AZ)* | A Comparative Institutional Analysis of Conjunctive Management Practices Among Three Southwestern States | 198,000/3 |

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| **Mark D. Sobsey**<br>Dept. of Environmental Sciences & Engineering<br>*Univ. of North Carolina-Chapel Hill (NC)* | Detecting Fecal Contamination and its Sources in Water and Watersheds | 400,000/3 |
| **Robert Jan Stevenson**<br>Dept. of Biology<br>*Univ. of Louisville (KY)* | An Ecoregion-Specific Comparison of Stream Community Responses to Nutrient Gradients Using Both Survey and Experimental Approaches | 376,200/3 |
| **David G. Tarboton**<br>Dept. of Civil & Environmental Engineering<br>*Utah State Univ. (UT)* | Scaling Up Spatially Distributed Hydrologic Models of Arid Watershed | 330,000/3 |
| **Albert J. Valocchi**<br>Dept. of Civil Engineering<br>*Univ. of Illinois-Urbana (IL)* | Traveling Wave Behavior During Subsurface Transport of Biologically Re-active Contaminants: Implications for In situ Bioremediation | 200,000/3 |
| **David S. White**<br>Hancock Biological Station<br>*Murray State Univ. (KY)* | A Comparison of Agriculture vs. Forested Basins: Carbon and Nutrient Cycling within the Hyporheic Ecotone of Streams | 300,000/3 |
| **Tadashi Yoshinari**<br>School of Public Health<br>*SUNY-Albany (NY)* | In situ Assessment of the Transport and Microbial Consumption of Oxygen in Groundwater | 346,500/3 |
| **Jurgen Schmandt**<br>Center for Global Studies<br>*Houston Advanced Research Center (TX)* | Water and Sustainable Development in the Binational Lower Rio Grande/Bravo Basin | 700,00/2 |

## CHEMISTRY AND PHYSICS OF AIR --- Exploratory Research Grants

EPA Contact: Deran Pashayan 202-260-2606

| Principal Investigator<br>Department/Institution | Grant Title | Funding($)/ Project Period |
|---|---|---|
| **Mark Thiemens**<br>Dept. of Chemistry –<br>*Univ. of California, San Diego (CA)* | The Measurement of the Oxygen Isotopic Composition of Tropospheric Ozone | 211,727/3 |
| **Steven D. Gardner**<br>Dept. of Chemical Engineering<br>*Mississippi State Univ. (MS)* | An Investigation of the Gas Sensing Properties of a Novel Manganese-Oxide Supported Gold Catalyst | 98,580/2 |
| **Mark Jacobson**<br>Dept. of Civil Engineering<br>*Stanford Univ. (CA)* | Proposal to Further Research, Develop, and Apply an Air Pollution Model System | 325,700/3 |
| **Thomas Hard**<br>Dept. of Chemistry<br>*Portland State Univ. (OR)* | Atmospheric Free-Radical Measurements Related to Photochemical Oxidants in Urban Air | 276,323/2 |
| **Jeffrey C. Weil**<br>Cooperative Inst. for Research in Environmental Sciences<br>*Univ. of Colorado-Boulder (CO)* | Lagrangian Modeling of Pollutant Dispersal in the Atmospheric Boundary Layer | 164,473/2 |
| **Liaquat Husain**<br>Wadsworth Center for Labs and Research<br>*New York State Dept of Health (NY)* | Tracer Studies of SO2 in Clouds | 335,659/3 |
| **Spyros N. Pandos**<br>Dept. of Chemical Engineering<br>*Carnegie Mellon Univ. (PA)* | Formation and Physical Properties of Secondary Organic Aerosol | 382,668/3 |
| **Jeffrey L. Collett**<br>Dept. of Atmospheric Science<br>*Colorado State Univ. (CO)* | Effects of Non-Uniform Cloud Drop Composition of Pollutant Transformation and Removal in Winter Clouds | 339,273/3 |

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|---|---|---|
| **Murray Johnston**<br>Dept. of Chemistry Biochemistry<br>*Univ. of Delaware (DE)* | Speciation of Volatile and Reacting Compounds in Particulate Matter | 334,455/3 |
| **Bernd Simoneit**<br>College of Oceanic and Atmospheric Sciences<br>*Oregon State Univ. (OR)* | Organic Tracers of Plant Classes in Biomass Combustion and Smoke in Aerosols | 196,244/2 |
| **Daniel J. Jacob**<br>Dept. of Atmospheric Chemistry<br>*Harvard Univ. (MA)* | Human Influence on Ozone in the Tropical Troposphere: An Interpretation of Observations Using a Global Three-Dimensional Model | 395,000/3 |

## ENVIRONMENTAL BIOLOGY --- Exploratory Research Grants

EPA Contact: Clyde Bishop 202-260-5727

| Principal Investigator<br>Department/Institution | Grant Title | Funding($)/ Project Period |
|---|---|---|
| **Franklin R. Hall**<br>Ohio Agricultural Research & Development Center<br>*Ohio State Univ. (OH)* | Reducing Pesticide Application Rates by Elucidating the Pesticide Dose-Transfer Process | 264,163/3 |
| **Howard S. Ramsdell**<br>Dept. of Environmental Health<br>*Colorado State Univ. (CO)* | Biomarkers and Effects of Estrogenic Chemicals in Frogs | 145,360/2 |
| **Michael Plewa**<br>Inst. for Environmental Studies<br>*Univ. of Illinois (IL)* | Isolation and Characterization of Plant-Activated Environmental Arylamines | 290,170/3 |
| **Eva J. Pell**<br>Environmental Resources Research Inst.<br>*Pennsylvania State Univ. (PA)* | Genetically-Engineered Potato Plants which do not Produce Ozone-Induced Ethylene | 390,984/3 |
| **David L. Bushbee**<br>Dept. Anatomy & Public Health<br>*Texas A&M Univ. (TX)* | Physiological Effects of Pollutants in the Bottlenose Dolphin | 412,890/3 |

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| **Francois M. M. Morel**<br>Dept. Geological Sciences<br>*Princeton Univ. (NJ)* | Microbial Transformations of Arsenic in Anoxic Waters | 322,982/3 |
| **Chen S. Lee**<br>Dept. of Chemistry<br>*Iowa State Univ. (IA)* | Capillary Immunophoresis for Environmental Monitoring | 260,580/3 |
| **David H. Hinton**<br>School of Veterinary Medicine<br>*Univ. of California-Davis (CA)* | Linkage of Stress Proteins and Alterations: A Laboratory and Field Investigation | 388,578/3 |
| **David A. Stahl**<br>Dept. of Civil Engineering<br>*Northwestern Univ. (IL)* | Integrating Molecular and Bio-chemical Techiques to Characterize Adaptation Mechanisms of Anaerobic Microbes | 406,372/3 |
| **Abdul Matin**<br>Dept. of Microbiology & Immunology<br>*Stanford - Univ. (CA)* | Use of Pseudomonas Starvation Promoters in In-Situ Bioremediation | 401,960/3 |
| **Ronald S. Tjeerdema**<br>Dept. of Chemistry & Biochemistry<br>*Univ. of California-Santa Cruz (CA)* | Determination of the Relative Sensitivity of the Northern Elephant Seal and other California Pennipeds to the Toxic Effects to PCB's | 294,218/3 |
| **Michael R. Hyman**<br>Dept. of Botany & Plant Pathology<br>*Oregon State Univ. (OR)* | Aerobic Cometabolism of Ether-Bonded Compounds | 358,953/3 |
| **Steven K. Schmidt**<br>Dept. of Environmental Population & Organismic Biology<br>*Univ. of Colorado-Boulder (CO)* | The Effect of Anthropogenic Nitrogen on the Functioning of Alpine and Subalpine Ecosystems: Nitrogen Cycling and Trace Gas Fluxes | 329,280/3 |
| **William H. Benson**<br>Department of Pharmacology<br>*Univ. of Mississippi (MS)* | Environmental Xenoestrogens and Reproductive Toxicity in Fish | 198,495/2 |

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| **David B. Herbst**<br>Sierra Nevada Aquatic Research Lab.<br>*Univ. of California-Santa Barbara (CA)* | Evaluation of Range-Land Stream Condition and Recovery Using Physical and Biological Assessment of Non-Point Source Pollution: Studies Under Different Grazing Management Practices | **236,431/3** |
| **Dorothy E. Schumm**<br>Dept. of Medical Biochemistry<br>*Ohio State Univ (OH)* | Use of a Tumor Marker to Monitor Exposure to Aquatic Pollutants in the Brown Bullhead | **285,022/3** |
| **Anne-Marie Stopm**<br>Forestry Dept.<br>*North Carolina State Univ. (NC)* | Genetic Improvement of Duckweed (Lemna Gibba) Wastewater Treatment | **143,962/2** |
| **Lilly R. Young**<br>AgBiotech Center<br>*Rutgers Univ. (NJ)* | Anaerobic Biotransformation of Pesticides in Near Coastal Environments | **345,979/3** |
| **Stanley J. Opella**<br>Dept. of Chemistry<br>*Univ. of Pennsylvania (PA)* | NMR Structural Studies of Mercury Transport Proteins | **358,161/3** |
| **Roger M. Nisbet**<br>Dept. of Biological Sciences<br>*Univ. of California-Santa Barbara (CA)* | A Framework for Predicting the Effects of Environmental Change on Populations | **360,037/3** |
| **John H. Andrews**<br>Plant Pathology Dept.<br>*Univ. of Wisconsin (WI)* | Detection, Quantification, and Biogeography of Microbes in Ecosystems | **401,130/3** |
| **James T. Oris**<br>Dept. of Zoology<br>*Miami Univ. (FL)* | Ecological Assessment of the Phototoxic Polycyclic Aromatic Hydrocarbon Fluoranthene in Freshwater Systems | **450,000/3** |
| **Harrish C. Sikka**<br>Great Lakes Lab.<br>*SUNY-Buffalo (NY)* | Comparative Metabolism of Unsubstituted and Methylated Polynuclear Aromatic Hydrocarbons by Fish | **400,642/3** |

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| **Charles D. Rice**<br>College of Veterinary Medicine<br>*Mississippi State Univ. (MS)* | The Immunotoxicity of Combihed TBT and Coplanar PCB Exposures in Fish | 244,456/3 |
| **Mark E. Hahn**<br>Biology Dept.<br>*Woods Hole Oceanographic Inst. (MA)* | Cultured Fish Cells as Model Systems for Studying Mechanisms of Dioxin Toxicity | 252,790/2 |
| **John Stegeman**<br>Biology Dept.<br>*Woods Hole Oceanographic Inst. (MA)* | Catalytic Function of Expressed Teleost Cytochrome P4501A | 251,946/2 |
| **Mohamed Faisal**<br>School of Marine Science<br>*College of William & Mary (VA)* | Effects of Metals on Detoxification, Carcinogenicity, and Immunotoxicity | 449,794/3 |

## ENGINEERING --- Exploratory Research Grants

EPA Contact: Bala Krishnan 202-260-2613

| Principal Investigator Department/Institution | Grant Title | Funding($)/ Project Period |
|---|---|---|
| **Carl R. F. Lund**<br>Chemistry Engineering Dept.<br>*SUNY-Buffalo (NY)* | Using Membrane Reactors to Reduce the Generation of Waste Products | 193,389/2 |
| **Mark M. Benjamin**<br>Dept. of Civil Engineering<br>*Univ. of Washington (WA)* | Investigation and Optimization of Dual Coagulation Processes | 254,064/3 |
| **Richard I. Stressel**<br>Dept. of Civil Engineering<br>*Univ. of South Flordia (FL)* | Waste Liner Compatibility Studies Using Comprehensive Testing System for Geo-Membrane Liners | 182,621/1 |
| **Marc A. Edwards**<br>Dept. of Civil, Environmental & Architectural Engineering<br>*Univ. of Colorado-Boulder (CO)* | Arsenic Removal by Softening and Coagulation | 244,426/3 |

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| **Richard B. Timmons**<br>Dept. of Chemistry & Biochemistry<br>*Univ. of Texas-Arlington (TX)* | A Novel New Approach to Detoxification<br>of Polychlorinated Solvents a Waste-to-<br>Useful Fuel Conversion Technology | 303,082/3 |
| **P. Somasundaran**<br>School of Mines<br>*Columbia Univ. (NY)* | Fundamental Studies on Management of Industrial<br>Sludges - Enhanced Flocculation of fine Particle<br>Suspensions by Manipulation of Polymer Conformation | 293,370/3 |
| **Richard L. Corsi**<br>Center for Research in Water Resources<br>*Univ. of Texas-Austin (TX)* | VOC Emissions from Sewers: Process<br>Drains and Drop Structures | 271,896/3 |
| **Theodore C. Crusberg**<br>Dept. of Biology & Biotechnology<br>*Worcester Polytechnic Inst. (MA)* | Biomineralization of Heavy Metals<br>Within Fungal Mycelia: A New Technology<br>for Bioremediation of Hazardous Wastes | 278,295/3 |
| **Daniel W. Armstrong**<br>Chemistry Dept.<br>*Univ. of Missouri-Rolla (MO)* | Pollution Prevention and Enhancement of<br>Biodegradability Via Isomer Elimination Products | 267,000/3 |
| **Pericles Stavropoulos**<br>Dept. of Chemistry<br>*Boston Univ (MA)* | Biomimetic Oxidation of Hydrocarbons<br>Related to Bioremediation Processes | 284,297/3 |
| **Carl D. Palmer**<br>Dept. of Environmental Science & Engineering<br>*Oregon Graduate Institute of Science & Technology (OR)* | Attenuation of Chromium in Alkaline<br>Chromium Substitution in Etringites and<br>$C_4AH_{12}$ - Monosulfates | 176,630/2 |
| **Richard L. Valentine**<br>Dept. of Civil & Environmental Engineering<br>*Univ. of Iowa (IA)* | Characterization and Kinetics of Contaminant<br>Oxidation and Hydrogen Peroxide Decomposition<br>in Presence of Subsurface Material | 189,242/3 |
| **Pedro J. Alvarez**<br>Dept. of Civil & Environmental Engineering<br>*Univ. of California-Davis (CA)* | Biostimulation of BTX Degradation with<br>Environmentally Benign Aromatic Substrates | 246,342/3 |

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| **Jeanie L. Darby**<br>Dept. of Civil & Environmental Engineering<br>*Univ. of California-Davis (CA)* | Influence of Biocolloids and Biocolloidal Structure on the Dewaterability of Anaerobically Digested Sludge | **132,678/2** |
| **Charles M. King**<br>Environmental Systems Engineering<br>*Clemson Univ. (SC)* | Catalytic Dehalogenationof PCBs and Pesticides in Supercritical Fluids | **189,104/2** |
| **Steven S.C. Chuang**<br>Dept. of Chemical Engineering<br>*Univ. of Akron (OH)* | Catalytic Reduction of Nitric Oxide | **280,211/3** |
| **Ashok Mulchandani**<br>Dept. of Chemical Engineering<br>*University of California Riverside (CA)* | Application of Surface Expressed Phosphotriesterase for Detoxification and Monitoring of Organophosphorus Pesticides | **293,794/3** |
| **Ronald K. Hanson**<br>Dept. of Mechanical Engineering<br>*Stanford Univ. (CA)* | Multiplexed Diode-Laser Gas Sensor System for In-Situ Multi-Species Emissions Measurements | **187,691/2** |
| **James A. Smith**<br>Dept. of Civil Engineering & Applied Mechanics<br>*Univ. of Virginia (VA)* | Simulation of Kinetic Sorption and Desorption of TCE and Surfactant in Groundwater at Picatinny Arsenal, NJ | **79,969/1** |

## MINORITY INSTITUTIONS --- Exploratory Research Grants

EPA Contact: Virginia Broadway 202-260-7664

| Principal Investigator Department/Institution | Grant Title | Funding($)/ Project Period |
|---|---|---|
| **Vladimir M. Shalaev**<br>Physics Dept.<br>*Univ. of New Mexico (MN)* | Radition Scattering by Fractal Clusters in Aerosols | **155,609/2** |
| **Gregory A. Ahern**<br>Dept. of Zoology<br>*Univ. of Hawaii (HI)* | Cellular Mechanisms of Heavy Metal Detoxification in Crustaceans | **420,636/3** |

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| **Maria E. Alvarez**<br>Dept. of Biological Sciences<br>*Univ. of Texas-El Paso (TX)* | Reversible Inactivation of Viruses in Groundwater | 144,581/2 |
| **Rafael Arce**<br>Dept. of Chemistry<br>*Univ. of Puerto Rico-Rio Piedras (PR)* | Product Formation and Identification in the Photo Degradation of PAH in Models of Atmospheric Particulate | 254,723/3 |
| **Govind S. Nadathur**<br>Dept. of Marine Sciences<br>*Univ. of Puerto Rico-Mayaguez (PR)* | Molecular Probes for Bacterial Vectors in Ciguatera Sea Food Poision | 222,569/3 |
| **Howard G. Adams**<br>Dept. of Engineering<br>*Univ. of Notre Dame (IN)* | Administration and Development of a Traineeship Program for Culturally Diverse Graduate Students | 3,000,000/3 |
| **Raul G. Cuero**<br>CARC<br>*Prairie View A&M Univ. (TX)* | Optimization of Oil Biodegradation by Mixed Bacterial and Fungal Populations | 125,035/2 |

## SOCIO-ECONOMICS --- Exploratory Research Grants

EPA Contact: Gregory Ondich 202-260-5747

| Principal Investigator Department/Institution | Grant Title | Funding($)/ Project Period |
|---|---|---|
| **Douglas L. Anderton**<br>Dept. of Sociology<br>*Univ. of Massachusetts (MA)* | A National Evaluation of Equity in Hazardous Waste Sites | 263,470/2 |
| Stan L. Albrecht<br>Inst. for Health Policy Research<br>*Univ. of Florida (FL)* | Low-Level Radioactive Waste Siting-Towards the Development of More Effective Policy through Understanding Failure | 295,891/2 |

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| **David Ziberman**<br>Dept. of Agricultural & Resource Economics<br>*Univ of California-Berkeley (CA)* | The Microeconomy of Chemical Use on Residential Landscapes | 368,908/3 |
| **Katherine T. McClain**<br>Dept. of Mineral Economics<br>*Pennsylvania State Univ. (PA)* | Undesirable Facilities and Political Boundaries: Neighborhood Dynamics and House Prices | 64,381/1 |
| **Joseph A. Herriges**<br>Dept. of Economics<br>*Iowa State Univ. (IA)* | The Robustness of Welfare Estimates for Environmental Goods from Discrete Choice Recreational Demand Models | 87,912/2 |
| **Anna Alberini**<br>Quality of the Environment Division<br>*Resources for the Future (DC)* | Estimating Ownership and Use of Older Cars | 50,000/1 |
| **Paul A. Sabatier**<br>Division of Environmental Studies<br>*Univ. of California-Davis (CA)* | Coalition Formation and Stability in Environmental Policy: Testing a Revised Version of Advocacy Coalition Framework on San Francisco Bay/Delta Water Policy | 158,226/2 |
| **Max A. Pfeffer**<br>Dept. of Rural Sociology<br>Cornell Univ. (NY) | Public Opinion on Environment and Water Quality Management in the New York City Watershed | 371,317/3 |

## CHEMISTRY AND PHYSICS OF WATER --- Exploratory Research Grants

EPA Contact: Barbara Levinson 202-260-5983

| Principal Investigator Department/Institution | Grant Title | Funding($)/ Project Period |
|---|---|---|
| **Susan Powers**<br>Dept. of Civil & Environmental Engineering<br>*Clarkson Univ. (NY)* | Reformulated Gasoline: Transport and Clean-up of Spills to the Subsurface | 240,479/3 |

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| **Jennifer A. Field**<br>Dept of Agricultural Chemistry<br>*Oregon State Univ. (OR)* | Ion-Pair/Supercritical Fluid Extraction and Derivation for Polar Organic Pollutant Analysis | **364,424/3** |
| **Mukul M. Sharma**<br>Dept. of Chemical Engineering<br>*Univ. of Texas-Austin (TX)* | NMR Imaging of Biofilm Growth in Porous Media | **449,760/3** |
| **Linda B. McGown**<br>Department of Chemistry<br>*Duke Univ. (NC)* | Spectral Characterization of Humic Substances | **332,309/3** |
| **Douglas G. Capone**<br>Chesapeake Biological Lab.<br>*Univ. of Maryland (MD)* | Importance of Reductive Dechlorination in Chesapeake Bay Sediments: Role of Sulfate Reduction | **242,538/3** |
| **Martin Reinhard**<br>Dept. of Civil Engineering<br>*Stanford Univ. (CA)* | Analysis of Halogenated Organic Particle-Scale Desorption Via Column Studies and 13C Solid State NMR Spectroscopy | **274,835/3** |
| **Ray von Wandruszka**<br>Dept. of Chemistry<br>*University of Idaho (ID)* | The Secondary Structure of Humic Acid and its Environmental Implications | **323,920/3** |
| **Chonmiao Zheng**<br>Dept. of Geology<br>*Univ. of Alabama (AL)* | A Global Optimization Approach for Parameter Identification in Contaminant Transport Modeling | **118,996/2** |
| **J. Houston Miller**<br>Dept. of Chemistry<br>*George Washington Univ. (DC)* | Nitrogen Deposition onto Aqueous Media: Quantitative Diagnostics, Laboratory Measurements, and Model Developments | **182,227/3** |
| **Constantinos V. Chrysikopoulos**<br>Dept. of Civil & Environmental Engineering<br>*Univ. of California, Irvine (CA)* | Dissolution Kinetics of Single and Multicomponent NAPL Pools in Saturated Three-Dimensional Porous Media | **315,368/3** |

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| **Jean-Marc Bollag**<br>Environmental Resources Research Institute<br>*Pennsylvania State Univ. (PA)* | Oxidative Coupling as a Cause of Substitutent Release from Aromatic Pollutants | **401,838/3** |
| **Gamani R. Jayaweera**<br>Dept. of Land, Air & Water Resources<br>*Univ. of California-David (CA)* | Redox Status and Degradation Kinetics of RepresentativeTriazine and Urea Herbicides in Soil-Water Systems | **364,941/3** |
| **Dianne A. Blake**<br>Dept. of Ophthalmology<br>*Tulane Univ. (LA)* | Quantitation of Heavy Metals by Immunoassay | **362,823/3** |
| **Robert J. Hurtubise**<br>Dept. of Chemistry<br>*Univ. of Wyoming (WY)* | Solid-Matrix Luminescence Analysis of B(a)P-DNA Adducts | **413,055/3** |

Office of Research and Development

# 1996 Research Opportunities

National Center for Environmental Research and Quality Assurance

Peter W. Preuss, Center Director - Jack Puzak, Deputy Director - Melinda Mclanahan, Associate Director for Science

**Ecological Assessment** (a two-part solicitation) ***Regional Ecosystem Protection and Restoration:*** This solicitation requests research that ultimately will reduce the uncertainty in conducting ecological assessments at multiple ecological scales - watershed scale, regional scale, and national scale assessments. The research is intended to improve the Agency's ability to: a) monitor the current and changing conditions of ecological resources from which success or failure of the ecosystem can be judged without bias; b) understand more fully the structure and function of ecosystems in order to develop improved management options; c) develop models to predict the response of ecosystems to changes resulting from human-induced stress from which possible ecosystem management strategies can be assessed; and d) assess the ecological consequences of management actions so that decisionmakers can best understand the outcomes of choosing a particular management strategy.

The second part of this solicitation, ***Global Climate Change:*** seeks research proposals that address regional scale vulnerabilities in the United States to global climate change (e.g., Southeast, Great Plains, and U.S. Caribbean or Pacific Islands) with an integrative emphasis. Proposals should be based on, and use, existing data and assessments when appropriate. Consortia of broadly-based inter-disciplinary researchers are encouraged to address areas of concern, such as (but not limited to) the following: a) development and demonstration of an integrated assessment methodology that can provide a framework and a process for organizing and interpreting diverse sets of technical, social, and economic information to support policy decision-making; b) ecological and hydrological responses in the coastal zones, lakes, and rivers due to changes in sea level and precipitation, and associated impacts on habitats, water supply, natural resources (forest/agricultural products, commercial recreational fisheries, tourism), and public health (increased incidence and areal spread of vector-and water-borne diseases) caused by climate change; c) economic assessment of impacts and relative risk of climate change versus other anthropogenic stressors.

**Closing Date: 3/15/96.**

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**Exposure of Children to Pesticides:** This solicitation seeks research on children's cumulative exposure to pesticide classes such as, but not limited to, pyrethroids, cholinesterase inhibitors, and triazine herbicides, using a method that treats children as a unique sub-population and not simply as "small adults." Grant proposals should address one or more of the following topics related to children's exposure: 1) Development of approaches for assessing children's exposure to the pesticides of interest via multiple pathways and routes (e.g., inhalation, dietary and non-dietary ingestion, and dermal contact). This research should emphasize age-related differences and characteristics of child behavior in dietary habits, hand-to-mouth activities, and contact with contaminated surfaces and objects. 2) Research that evaluates and compares children's exposures to pesticides resulting from various sources (e.g., agricultural food application, residential lawn treatment, indoor residential uses, pet uses) and apportions the exposure and potential dose. 3) The development of methods for assessing cumulative exposures to specific classes of pesticides. This should include methods to determine the temporal nature of various sources and the resulting impact on exposure.

**Closing Date: 3/1/96.**

**Contact:** Chris Saint, 260-1093
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**Air Quality** This solicitation is multi-part, covering Tropospheric Ozone, Urban Air Toxics, Great Waters Air Toxics Loadings, Ecological Effects, and Indoor Air Quality research.

***Tropospheric Ozone:*** 1) Laboratory studies to elucidate the products formed during the oxidation of biogenic VOCs and aromatic VOCs under atmospheric conditions, the reactions of olefins with $O_3$ and $NO_3$, and the reactions of OH radicals with higher molecular weight alkanes and alkenes. 2) Laboratory studies of the kinetics and stoichiometry of reactions of high molecular weight organic peroxy radicals, and the reaction of peroxy radicals with NOX forming organic nitrogen reservoirs. 3) Smog chamber and modeling studies to develop advanced mechanistic models for atmospheric oxidant formation. 4) Laboratory investigations of the role of heterogeneous and aqueous-phase processes on gas-phase oxidant production and nitrogen oxides/nitrate chemistry.

***Modeling Research:*** 1) Studies to explore boundary layer turbulence, vertical mixing, and cloud processes and their interactions with atmospheric chemistry. 2) Research to develop and test quantitative techniques for assessing errors or uncertainties in physical and chemical processes (e.g., meteorology, deposition, photochemistry, and emissions) that affect concentration estimates from ozone air quality modeling systems. 3) Studies to develop and test innovative techniques to evaluate the functioning of physical and chemical processes in ozone air quality modeling systems. 4) Monitoring and observations-based approaches to investigate the photochemical ozone problem and evaluating/developing emissions control strategies; use of existing SOS databases to develop/test approaches. 5) studies to develop and diagnostically evaluate emissions-based modeling which focuses on interactions of urban area and point source plumes with the surrounding regional atmosphere; use of existing SOS databases for model development and evaluation. 6) Research to develop air pollution prediction systems to provide real-time forecasting of ozone air quality.

***Ambient Measurement and Analysis Methods:*** 1) Studies that may lead to new, more sensitive techniques for ambient measurement, on short time scales, of chemically-significant trace gases (e.g., ozone, hydrocarbons, oxides of nitrogen, carbonyls, and key radical species) participating in the photochemistry of ozone. 2) Development of innovative in-situ and remote-sensing measurement methods for using ambient concentration and meteorological measurements in assessing the potential ozone response to local changes in precursor emissions/concentrations. 3) Instrument methods development studies or development of innovative data analysis techniques applicable to PAMS (Photochemical Assessment Monitoring Stations) objectives for cost-effective and accurate monitoring.

*Emissions:* 1) Studies of biochemical and physiological fundamental mechanisms linking seasonal and other significant variations in biogenic VOC emissions from important genera; field studies to assess the validity of the newly proposed mechanisms. 2) Development of improved algorithms for biogenic ozone-precursor emissions estimation. 3) Research, development, and field assessments of tunable laser or other fast response techniques for remotely measuring ozone precursor emissions from fugitive emission concentration fields and from on-road, in-operation mobile source emissions. 4) Studies that explore the sub-grid scale uncertainties of representing urban and point source emissions within air quality modeling systems.

### Air Toxics

The proposals submitted in response to this area will provide data valuable for both residual risk determinations and the urban area source strategy.

*Urban Air Toxics*: There is almost no direct observational evidence (i.e., epidemiologic data) linking health effects and ambient HAPs exposures. In part, this is due to limited exposure methods and data and the expense of adequate epidemiologic studies. Recently developed epidemiologic approaches may be useful in overcoming some of the traditional difficulties in this area, e.g., biomarkers, new statistical methods. A need exists to address the risks that may be posed by toxic contributions to the effects of urban mixtures ("urban soup") and/or risks that may be posed by individual and mixtures of toxic chemicals from large sources of pollution. EPA is seeking answers to the following key questions: Are there public health risks that result from a) exposures to recurrent acute exposures from both point and area sources, b) chronic exposures from individual facilities or the combined exposures from multiple facilities, and c) mixtures which impact the same or different organ systems? Can susceptible subpopulations be identified that are at increased risk due to higher exposures or biological sensitivities? What are the emissions of air toxic pollutants from sources of concern in urban areas?

To answer these questions EPA seeks research that uses a multidisciplinary approach to investigate source identification and characterization, exposure characterization (modeling/monitoring), and characterization of health outcomes as related to exposure. Research that addresses all three topics in an integrated study is preferred; however, source characterization for air toxics and epidemiology (health and exposure) can be considered separately. No consideration will be given to proposals that address only health or exposure.

*Great Waters Air Toxics Loadings:* Research is needed to reduce the uncertainty in estimating the contribution of atmospheric transport and deposition to overall loadings of toxic substances in the Great Lakes and the Chesapeake Bay. Work to date has focused principally on the transport and fate of mercury compounds in their different phases. Additional work has addressed polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and pesticides. Much of the work has centered on the Chicago and Baltimore urban areas in the Lake Michigan and Chesapeake Bay regions, respectively. The Agency is interested in proposals to reduce uncertainties in estimating the atmospheric transport and deposition of hazardous air pollutants into Great Waters regions. Specifically, proposals are requested for research devoted to different Great Waters regions or other hazardous air pollutants in the Lake Michigan and Chesapeake Bay regions.

*Ecological Effects*: Natural ecosystems are comprised of a mix of interacting species that compete for resources as they complete their life cycles. Ecosystems are exposed to a range of atmospheric pollutants that occur both singly and in combination. Individual plant response to pollutant stress varies by species, stage of development, and the presence of other stresses (e.g., insect and fungal pathogens, nutrient stress, water stress). However, individual species response to air pollution is not always reflective of overall ecosystem response since individual species respond differently depending on their competitive environment. Therefore, ecosystem sensitivity to pollutant stress is complex and needs to be studied across broad spatial and temporal scales. Research to evaluate ecosystem response to pollutant stress is needed to address a number of questions in several areas:

1) How does vegetation respond to co-occurring natural and/or anthropogenic stresses?

2) How does intra-and interspecific competition affect individual plant response to air pollutant stress?

3) How does stage of plant development and timing of pollutant exposure affect species response to air pollutants?

4) How do long-lived species, exposed to pollutants year after year, integrate pollutant damage over time?

5) What is the response of the plant community exposed to air pollutant stress?

6) What are appropriate indicators of ecosystem response to air pollution?

### Indoor Air Quality

EPA is seeking proposals targeted at techniques to reduce indoor exposures to biocontaminants. EPA is particularly interested in studies to determine the effects of environmental factors such as temperature, humidity, dust level, air velocity, and substrate materials on the deposition, amplification, and dissemination of biological contaminants including fungi and dust mites. High priority research areas include 1) factors controlling the dust mite population in the indoor environment, 2) the influence of substrate and relative humidity on colonization of toxic fungi, and 3) factors controlling dissemination of fungal contaminants.

**Closing Date: 3/15/96.**

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## Analytical and Monitoring Methods

The purpose of the program is to advance measurement science by stimulating research on radically new approaches to solving environmental monitoring problems. In evaluating proposals, EPA will favor research that is likely to solve real world monitoring problems.

*Field Analytical Methods*: Measurement technologies that can be used in the field to permit more rapid decision making, eliminate packaging and shipping samples to distant laboratories, and yield more information for less money are urgently needed. Such technologies need to be portable, yield real time (i.e., within 4 hours) data, rugged, sensitive, and suitable for the wide variety of samples that are commonly analyzed (e.g., industrial wastes, industrial waste waters, incinerator stack emissions) and, if possible, be able to measure multiple pollutants simultaneously. In addition to the aforementioned applications, rapid field tests are also needed by personnel confronted with responding to crisis situations (e.g., spills and accidents). Examples of what is meant by field-portable, rapid results monitoring methodology include the recently-developed and commercialized immunochemistry-based assays and hand-held X-ray fluorescence spectrometers.

*Continuous Measurement Methods*: Major improvements in waste process/treatment control and environmental decision-making could be made if more accurate, less costly, more rugged techniques were available which would yield continuous, or at least intermittent, data on pollutant concentrations in environmental media. Some monitoring situations where current methodology is known to be inadequate include the following: 1) Toxic metal (particularly mercury) and/or organic compound emissions from high temperature, complex matrix sources such as incinerators. 2) Release of volatile compounds from complex point sources or area sources (e.g., tanks, pipes, valves, landfills, contaminated soils) under ambient conditions. 3) Toxic chemical concentrations in the air over a defined area such as a hazardous waste site, an industrial facility, etc. 4) Organic and inorganic toxicants in municipal and industrial waste water on a continuous basis to eliminate the need to overengineer waste treatment facilities to ensure compliance with regulatory standards. 5) Deposition or emission flux of toxic air pollutants, especially semivolatile pollutants that exist both in the gas phase and on particulate matter. 6) Continuous measurement of the mass of inhalable particulate matter (PM2.5 and PM10), semi-volatile organic toxicants, and $NH_4NO_3$ in the air, not including the particle-bound water in the weight of material measured. 7) Continuous mass measurements of particle-bound water in airborne particulate matter (PM2.5 and PM10).

***Leachability Prediction***: Current methods for determining the leaching potential of waste materials are designed for determining whether a waste poses a hazard to ground water under specific improper disposal situations. These methods are not appropriate for assessing risk under other management situations. In order to better assess the potential risk posed by wastes under real world land management conditions and, therefore, permit the design of more cost-effective land management facilities, new methods are needed for characterizing the potential for toxic materials to migrate from waste materials that are destined for land management. One group of materials that pose a particular problem are those wastes that contain either a highly viscous or a non-newtonian liquid phase.

**Closing Date: 3/1/96.**
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## Drinking Water

This solicitation invites research grant applications in two areas: 1) Microbial Pathogens in Drinking Water Systems, and 2) Drinking Water Disinfection By-products (DBPs). The incidence of waterborne disease in the U.S. is highly uncertain. While the health effects caused by pathogens in drinking water are generally known, limited information is available on the doses and conditions that produce effects. Also, little is known about the extent to which bacterial growth in the distribution system is a cause of waterborne illness. Research is needed in the following areas: 1) Current methods for measuring Cryptosporidium and Giardia frequently produce inaccurate and highly variable recovery data, in part due to the small volume of water that can be practically analyzed. This has contributed to considerable uncertainty about the health risks associated with exposure to drinking water containing Cryptosporidium and Giardia, as has the lack of information about the viability of cysts and oocysts found in drinking water systems. Research is needed to develop practical, low cost, accurate, and specific methods to identify and quantify viable pathogenic cysts and oocysts in raw and finished drinking water systems. 2) Dose-response models have been developed for Cryptosporidium parvum, Giardia, and several waterborne viruses; however, the validity of these models at low doses is unknown. Research is needed to evaluate the reliability of existing models at low dose exposures and whether dose response models developed with animals can be translated to the existing human models. 3) Research is needed to develop an understanding of the risks associated with exposure to primary waterborne pathogens (e.g., Giardia, Cryptosporidium, and enteric viruses) as a function of such susceptibility factors as age, nutrition, protective immunity, and behavioral patterns.

***Drinking Water Disinfection By-products:*** Public water systems disinfect drinking water with chlorine or alternate disinfectants. While chlorine reduces microbial risk, the use of chlorine creates new potential risks from disinfection by-products formed during the water treatment process. Research is needed in the following areas: 1) Improving methods for estimating human exposures to by-products of different disinfection treatments. Proposals should address research on biochemical markers of human exposure and/or the development and validation of models of human exposure to DBPs. Please do not submit proposals for epidemiology studies. 2) Reducing uncertainty regarding appropriate markers of effects and susceptibility in both cancer and reproductive outcome epidemiology studies. Laboratory and/or field evaluations are needed of morphological, biochemical, and/or molecular alterations that may be useful as markers of effect and susceptibility. 3) Examining the feasibility of assessing the relative toxicity of DBP mixtures in drinking water (e.g., ozone/chloramines, chlorine/chloramines, and chlorine dioxide). Proposals may include such elements as: the feasibility of sample preparation; chemical analysis and assessment; and toxicological testing of mixtures. 4) Developing improved extraction procedures and advanced instrumentation to characterize the non-volatile and difficult to extract organic and inorganic DBPs. These procedures would be used in the development of methods to assess the frequency and magnitude of occurrence of by-products.

**Closing Date: 3/1/96.**
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## Environmental Fate and Treatment of Toxics and Hazardous Waste

This area seeks to strengthen the scientific basis for estimating risk through improved scientific knowledge about the fate and transport processes that affect contaminants and our ability to detect and measure them. Results of this research should also improve our ability to develop new approaches to remediation. Examples of topics of interest are: 1) Research to develop the ability to better predict the formation, degradation, and bioaccumulation constants of metal/organic complexes and organometallics and to develop equilibrium and kinetic sorption models for inorganic/organic metal species on environmental surfaces, both biotic and abiotic. A major focus of the research should be on contaminants and environmental settings typical of large, complex waste sites, e.g., mining sites, multiple industrial waste sites, and disposal in a single watershed 2) Research to develop models for predicting the fate and sorption properties of dense non-aqueous phase liquids (DNAPLs) in a wide range of environmental settings. 3) Research on interactions between subsurface geochemical and biological processes to determine their influence on the mobility, fate, and bioavailability of contaminants, particularly DNAPLs, in soils and ground water to quantify the transformations taking place in the subsurface and the fluxes of materials to other ecosystem components (receptors) and to develop indicators of subsurface ecosystem status. A major focus of the research should be on indicators that can serve as markers for naturally occurring biodegradation at DNAPL sites or for identifying novel processes and mechanisms for development of innovative subsurface remediation technologies. 4) Research on geochemical and geophysical processes that have the potential to lead to the development of more effective technologies for the removal of DNAPLs from the subsurface. 5) Research to develop methods and data to determine the properties and processes associated with subsurface contaminants that could be used to develop real-time measurement methods for determining the nature and extent of subsurface contamination problems and the progress of remedial actions to correct them and to develop prototype sensors based on these processes.

***Assessment of Risks of Contaminated Soils and Treatment Residuals:*** The level of cleanup greatly affects the cost of remediation. Remediation levels must insure that human health and the environment are adequately protected. To accomplish these objectives in a cost-effective manner, data are needed about the risks of contaminated soils, treated soils and other solid matrices in the vadose zone. Techniques for cost effectively measuring these possible impacts are also needed. Therefore, the EPA is soliciting proposals on one or more of the following topics: 1) Research on methods for assessing the potential human health and ecological impacts of residual contaminants (e.g., incinerator ash or untreated mine waste tailings that remain in place). Of particular importance are techniques applicable to assessing mixtures of residuals from thermal and chemical treatment of complex, toxic organics such as PAHs and PCBs which go through multiple steps of degradation. 2) Research on the factors influencing the availability of toxic metal or inorganic contaminants common at contaminated sites (e.g., CN, Cd, Hg, Cr(VI)). Example sources are mining operations, metal finishing sites, and other industrial operations. This research requires developing an understanding of the chemical, physical, and biological processes which influence the chemical form of the metal/inorganic, its mobility in the environment, and its assimilation by, and impacts on, human and ecological receptors.

**Closing Date: 3/1/96.**
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**Environmental Statistics** solicits proposals to establish (by means of a five-year cooperative agreement) a National Research Center on Statistics and the Environment that will provide a national capability to identify and perform cutting-edge research in environmental statistics, thereby furthering the application of statistics to the environmental sciences and facilitating the professional development of future environmental statisticians.

**Closing Date: 3/15/96.**
Contact: Chris Saint, 260-1093
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**High Performance Computing** EPA is seeking proposals aimed at developing high performance computing technologies for use in environmental assessment and management. Of particular interest are proposals that target research on problem solving environments, parallel algorithms, and data access and analysis techniques. All technology advances should be demonstrated in a results-oriented testbed that specifically addresses cross-media ecosystem management capabilities to support community based environmental assessments.

***Problem Solving Environments:*** Proposals in this category should address one or more of the following objectives: 1) Explore conceptual data models that encompass all data types required for cross-media environmental assessment and decision making. To test the robustness of the data models by developing reusable scalable input/output (I/O) class libraries to support development of interoperable cross-media environmental modeling and decision support frameworks including geospatial data for integrated visualization and geospatial analysis. 2) Explore and evaluate alternative techniques for full integration (close coupling) of geospatial analysis, environmental modeling, and object oriented databases involving very large three dimensional, time and space varying data. 3) Develop scalable parallel I/O techniques for object oriented data bases, I/O mechanisms to support data reordering, fast queries over distributed databases and archives, and I/O for binary large objects. 4) Develop reusable object-model-based class libraries for parallel numerical solvers and science processes related to cross-media modeling, uncertainty, and risk assessment.

***Parallel Algorithms:*** Currently, issues of spatial and temporal scale and computational feasibility have limited advances in this area. EPA is requesting proposals to explore scalable parallel approaches for effective coupling among water, air, soil, terrestrial, and ecological models and research on issues of scale and resolution that affect computational_feasibility. Proof of concept and research-prototype development of coupled models in a scalable parallel computing environment are important components of the research. Proposals should address one or more of the following objectives: 1) Evaluate performance characteristics of alternative domain decomposition approaches and scalable parallel algorithms for multi media (air, water, soil, terrestrial systems, etc.) environmental modeling, coupled air-water exchange processes, and/or associated uncertainty and risk computations. 2) Develop scalable parallel algorithms for adaptive grid approaches and evaluate the preservation of accuracy with the interaction of regular and irregular grid systems in the context of cross-media environmental assessments. 3) Devise methods for optimization problems involving nonlinear processes, develop scalable parallel algorithms for efficient implementation, and explore the accuracy of sampling strategies for non linear response space.

***Data Access and Analysis Techniques:*** Intelligent and effective methods are needed to satisfy the extensive need for environmental data to support environmental management activities. Proposals should address one or more of the following objectives: 1) Develop techniques for exploring multiple-scales and cross-media environmental data including, 1) Agent facilitated data queries of distributed data sources, methods for organizing standard metadata for fast queries, capabilities to handle legacy data, dynamic analysis of very large distributed archives of diverse multi-scale data useful for environmental decision making. 2) High performance data assimilation techniques supported by scalable parallel I/O systems to enable the integration of remote sensing data into predictive models to enhance the quality of model predictions. 3) Multivariate analysis and visualization techniques over three dimensional space and time and techniques for desktop virtual environments for analysis of time sequences of three dimensional environmental data. **Closing Date: 3/15/96.**
Contact: Chris Saint, 260-1093
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**Endocrine Disruptors** The objective of EPA's Endocrine Disruptor research program is to evaluate potential effects associated with endocrine disruptors and to determine the extent of current exposures. Investigator-initiated grant proposals are sought in four broad areas: 1) human health effects, 2) ecological health effects, 3) human exposure evaluations, and 4) ecological exposure evaluations. Examples of research topics of interest to EPA include: a) Refinement of methods to monitor and characterize exposure of humans and/or wildlife to endocrine disruptors, including aspects such as exposure half-life, speciation, uptake, and phase equilibrium. b) Development and validation of models to estimate exposure to endocrine disruptors from different sources via multiple pathways. c) Development and validation of biomarkers of endocrine disruptor exposure and effect. e) Development and validation of in vitro and short-term *in vivo* test systems to screen for chemicals with specific mechanisms of action expressed via different endocrine pathways; test systems that are applicable across multiple phylogenetic levels are of particular interest. f) Development of Physiologically-Based Pharmacokinetic (PB-PK), Physiologically-Based Toxicokinetic (PB-TK), and Biologically-Based Dose-Response (BBDR) models that incorporate key species-specific parameters critical to the extrapolation of effects across phyla. g) Refinement and validation of methods and models that relate effects observed at subcellular levels to adverse impacts in individuals (both human and wildlife species) and in wildlife populations.

**Closing Date: 5/1/96.**
Contact: Robert Menzer, 260-5779
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**Role of Interindividual Variation in Human Susceptibility to Cancer** EPA is interested in: 1) the identification of human genetic polymorphisms which can affect carcinogenic risk from environmental agents, 2) the quantitative relationship of these polymorphisms to the risk of cancer from environmental agents, and 3) the distribution of such polymorphisms in the general population. Proposals should address human variation in susceptibility with regard to polymorphisms and a specific chemical carcinogen of concern to the Agency.

**Closing Date: 5/1/96**

**Contact:** David Reese, 260-7342
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## Risk-Based Decisions for Contaminated Sediments

Sediments have become a focus of concern for EPA because of their potential adverse impacts, the long periods of time associated with natural assimilation of many in-place contaminants, and the high costs of mitigation. The following areas of research provide the framework for the competition:

**Risk-Based Assessments**

***Hazard Identification:*** All assessment techniques, either biological or chemical, need validation of their ability to predict impacts on indigenous aquatic communities. When laboratory data and test systems are being used to predict contaminated sediment impacts, there needs to be a strong lab-to-field association. Research is needed to validate these techniques using a risk-based approach. Validation efforts must consider the uncertainty associated with the assessment and the degree of protection offered to the aquatic community. The effects of contaminants associated with sediments are often manifested through aquatic food chains. Research and mathematical modeling are needed to accurately characterize the transfer of toxic substances from their source to the sediments, from sediments to organisms, and from organism to organism.

***Dose-Response:*** Short-term sediment toxicity test methods exist to examine aquatic life effects using laboratory animals. In addition, there are some theoretical models to predict whether certain single chemical concentrations will have an adverse impact on benthic communities. Most contaminated sediments contain mixtures of chemicals; thus, mixture toxicity research and modeling both for organic substances and trace metals are needed to complement single chemical assessments. Further research is needed to expand the number and kind of species being tested.

***Exposure Assessment:*** Knowledge of the fate and bioavailability of toxic substances in sediments is sometimes highly speculative. Additional knowledge is needed on: 1) the fate of toxic substances during resuspension, especially during severe events, and biological, chemical, and physical factors controlling resuspension of sediments; 2) the spatial (horizontal and vertical) and temporal extent of sediment contamination; and 3) biogeochemical partitioning between sediments, water, and biota to better predict bioavailability of chemicals believed to have adverse impacts.

**Risk Management**

***Sediment Treatment:*** Contaminated sediments requiring treatment can result from either sediment management operations (e.g., maintenance dredging) or remediation efforts. The environmental risks associated with these sediments need to be reduced. For example, better methods to predict the extent to which dredging operations resuspend and transport contaminants to less contaminated areas are needed. Research is needed to develop innovative treatment options for sites with large volumes of contaminated sediment (e.g., harbors).

**Closing Date: 5/1/96**

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## Exploratory Research

This solicitation invites applications in two areas. ***Exploratory Research:*** Applicable areas are biology, chemistry, physics, human health, socioeconomic, and engineering (that are not covered in the specific areas described in earlier sections), with a focus on aspects of pollution identification, characterization, abatement, or control of the effects of pollutants on human and biological systems.

***Early Career Research Awards:*** This program support outstanding scientists and engineers at the onset of their careers in U.S. colleges, universities, and not-for-profit institutions.

**Closing Date: 3/15/96.**

**Contact:** Clyde Bishop, 260-5727
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***In cooperation with the National Science Foundation, the U.S. Department of Energy, and the Office of Naval Research, U.S. Navy, ORD has issued a joint requests for application on the following topic of mutual interest.***

## Bioremediation

Research proposals are solicited that aim to further our understanding of the chemical, physical, and biological processes influencing the bioavailability and release of chemicals in soil under natural conditions, as well as the role of a chemical which when released from the soil and assimilated by a living organism, results in an adverse effect. The objective of the research should be to understand the commonality of processes and/or environmental effects involved in contaminant release, movement, and assimilation in order to determine broadly applicable techniques for measuring the potential impacts of contaminants in complex matrices. The emphasis in proposed research projects should be on the behavior of mixtures of chemicals. Interdisciplinary research is particularly encouraged. While studies on chemicals that may affect ecosystem and human health are desired, toxicological studies are not eligible. Similarly, studies involving pure cultures in the laboratory or bioreactors will not be reviewed. Laboratory studies must demonstrate applicability to field studies. A number of well-instrumented, characterized, and documented sites are available for field research.

**Closing Date: 5/1/96.**

**Contact:** Robert Menzer, 260-5779
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***Under a partnership with the National Science Foundation, ORD has issued a joint requests for applications on the following topics of mutual interest.***

## Water and Watersheds

This competition emphasizes multidisciplinary, fundamental research on important scientific, engineering, and socioeconomic principles for understanding, protecting, and restoring water resources and watershed processes in the U.S. and other regions of the world. A systems approach and general applicability of the research to watershed-scale questions are required in each proposal. Investigators are encouraged to bring together formerly disparate, state-of-the-art approaches to address watershed-scale issues and explore new paradigms that draw widely from different disciplines. Three overarching research components related to water and watersheds provide the framework for this competition. The degree to which these three components are integrated in a systems approach will be a review criterion. The most competitive proposals will be those that help integrate multiple goals of NSF and/or EPA programs and address questions that are comprehensive in scale and transferable in scope. Appropriate and innovative statistical methodologies and modeling are encouraged. Research that explores questions of spatial and temporal scaling is appropriate in the context of all components. The three overarching components are: 1) Ecological research that links diversity and vitality of aquatic biota and ecological processes, relationships among populations and communities of organisms, and landuse or other anthropogenic factors.

2) Hydrologic, biogeochemical, and engineering research that addresses the physical, chemical, and biological processes and mechanisms which govern the interactions of nutrients, metals, toxic materials, and organisms within and among surface waters, groundwaters, sediments, soils, and the atmosphere. 3) Social science research that develops a systemic perspective on, and predictive understanding of, the impacts and spatial aspects of human behavior and social and economic systems on surface and ground water resources and watersheds.

**Closing Date: 5/7/96.**

Contact: Barbara Levinson, 260-5983
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## Technology for a Sustainable Environment

This competition seeks research in three areas of pollution prevention: Chemistry; Engineering; and Measurement, Assessment, and Feedback Techniques. Goals of this area are to develop safer commercial substances and environmentally friendly chemicals and to develop novel engineering approaches for preventing or reducing pollution. The competition addresses technological environmental issues of design, synthesis, processing, and production and use of products in continuous and discrete manufacturing industries. Projects must employ fundamental new approaches and address, or be relevant to, current national concerns for pollution prevention.

**Description of possible projects**

***Chemistry for Pollution Prevention:*** The long-range goal of this program activity is to develop safer commercial substances and environmentally friendly chemical syntheses to reduce risks posed by existing practices. Pollution prevention has become the preferred strategy for reducing the risks posed by the manufacture, use, and disposal of commercial chemicals. A fundamental approach, a "green chemistry" approach, is to prevent pollution at its source, which includes: a) Design of alternative synthetic pathways for new or existing chemicals which do not utilize toxic reagents or solvents or do not produce toxic by-products or co-products. b) Design or redesign of useful chemicals and materials such that they are less toxic to health and the environment or safer with regard to accident potential. Appropriate areas of investigation include: chemical synthesis and catalysis; analysis and detection; separation processes; and reaction mechanisms.

Examples include: 1) Use of innovative methods such as catalysis and biocatalysis; photochemistry or biomimetic synthesis; and use of alternative starting materials which are innocuous or renewable. 2) Use of creative reaction conditions, such as using solvents which have a reduced impact on health and the environment or increasing reaction selectivity, thus reducing wastes and emissions.

***Engineering for Pollution Prevention:*** The focus of this program activity is to develop novel engineering approaches for preventing or reducing pollution from industrial manufacturing activities, both for continuous and discrete processes. The scope includes: equipment and technology modifications, reformulation or redesign of products, substitution of alternative materials, and in-process changes. Although these methods are often thought of in relation to the chemical, biochemical, and materials process industries, they can be utilized in many other industries such as semiconductor manufacturing systems. Potential areas of research include: 1) Novel, cost-effective methods for the highly efficient in-process separation of useful materials from the components of the process waste stream, for example, field-enhanced and hybrid separation processes. 2) Materials substitutions and process alternatives which prevent or reduce environmental harm, such as change of raw material or the use of less hazardous solvents, organic coatings, and metal plating systems. 3) New bulk materials and coatings with durability, long life, and other desirable engineering properties that can be manufactured with reduced environmental impact. 4) Improved reactor, catalyst, or process design in order to increase product yield. Approaches might include novel reactors such as reactor-separation combinations that provide for product separation during the reaction, alternative energy sources for reaction initiation, and integrated process design and operation. 5) Development of environmental technologies that use physical processes to alter biologically refractory pollutants both known and potential into forms that are amenable to biodegradation. 6) New or improved manufacturing processes that reduce production of hazardous effluents at the source. Examples include: machining without the use of cutting fluids that currently require disposal after they are contaminated; eliminating toxic electroplating solutions by replacing them with ion or plasma-based dry plating techniques. 7) Improved manufacturing processes that employ novel thermal or fluid and/or multiphase/particulate systems resulting in significantly lower hazardous effluent production. Examples include: novel refrigeration cycles using safe and environmentally-benign working fluids to replace halogenated hydrocarbons hazardous to upper atmosphere ozone levels; improved automobile combustion process design for reduced pollutant production. 8) Optimization of process manufacturing operations to prevent, reduce, or eliminate waste. Concepts include: increased in-process or in-plant recycling and improved and intelligent process control and sensing capabilities; in-process techniques that minimize generation of pollutants in industrial waste incineration processes.

***Measurement, Assessment, and Feedback Techniques for Pollution Prevention:*** This competition also encourages research in physical sciences and engineering that will lead to the development of novel measurement and assessment techniques for pollution prevention. Topics in this program activity include life cycle analysis, computational simulations, and process design algorithms for product life cycle analysis, as well as the development of appropriate measurement methods to use as input for such analyses. The methods developed should provide the basis for scientifically sound and quantitative comparisons of the environmental impact of various technologies. The following examples provide some areas of investigation: 1) Innovative, full scale, quantitative methodologies for conducting life cycle analysis which permit sound quantitative comparisons of impacts of different pollutants on different media. 2) Streamlined, targeted life cycle analysis and environmental product design methodologies and systems that can provide scientifically sound comparisons with less comprehensive data inputs and computational analysis. 3) Algorithms incorporating pollution prevention into process design, intelligent control, and simulation methodologies for process and manufacturing design. 4) Process simulator modules for new technologies such as novel membrane processes. 5) Improved and intelligent sensors and control algorithms for real time, in-process multivariate control of manufacturing equipment and systems to reduce waste material and hazardous emissions.

**Closing Date: 5/7/96.**

**Contact: Stephen Lingle, 260-5748**
**(lingle.stephen@epamail.epa.gov)**

## Decision Making and Valuation for Environmental Policy

This competition is presented to advance research to help develop practical approaches to estimating economic and social benefits and costs that are systematic and credible. This competition is intended to support research projects in four areas: 1) benefits of environmental policies and programs; 2) costs of environmental polices and programs; 3) ecosystem protection; and 4) normative behaviors and environmental decision-making. Specifically:

***Benefits of Environmental Policies and Programs:*** Environmental policies and programs are generally intended to protect or improve the health and well being of humans and the ecosystems vital to human welfare. Policies that enhance and protect the environment provide economic value and benefits to society. Currently, there are several approaches to measuring this value, including methods that rely predominantly upon either revealed or stated preferences for health and environmental goods and services. Improvements to existing methods and the development of new methods are encouraged. Examples of areas where government agencies have significant information needs in the environmental valuation area include: 1) Methods to improve estimation of values for reductions in mortality and morbidity risks resulting from pollution and other environmental hazards. Research on methods to address noncancer health benefits is particularly encouraged. 2) Identification and improvement of methods for measuring environmental quality influences on human welfare, including those that recognize distributional factors in addition to efficiency; 3) Methods to apply existing benefit estimates or valuation functions to assess the benefits of a distinct, but similar environmental change (i.e., benefits transfer methods). 4) Improved methods for valuing changes in the environmental quality of public resources (e.g., groundwater) regulated by multiple laws. 5) Methods to assess the benefits of providing environmental information to consumers, investors, and/or producers of goods and services.

*Costs of Environmental Policies and Programs:* This component of the competition seeks to strengthen the conceptual and empirical basis for cost estimation methods. Examples of topics of interest in this area are: 1) Integrated approaches to modeling production technology that includes both desirable outputs and potential wastes or pollutants, including conceptual and methodological research that captures life-cycle or legacy factors. 2) Methodology to estimate the cost savings from using economic incentives relative to other approaches to environmental pollution control. 3) Empirical research that compares estimated and realized costs for pollution prevention and abatement at levels of the plant, market, industry, and economy. 4) Improved methods to estimate and validate aggregate and sectoral costs of environmental protection programs including, for example, empirical analyses of system-wide and dynamic effects that capture plant location, productivity, and technological change.

*Ecosystem Valuation and Protection*: Proposals should emphasize these interdependencies in their research and focus on how comprehensive or critical ecosystem changes can be measured in terms of social welfare. Examples of the topics of interest in this component include:

1) Core concepts of comprehensive ecosystem function, including research that characterizes and quantifies the natural environment and links measures of ecosystem productivity and sustainability with economic activities and changes in human welfare. Improved understanding of the economic-ecological relationships in areas such as wetlands, timber, watersheds, minerals, wildlife/fish, and grasslands are of particular interest. 2) Methods for valuing biodiversity, populations of native species, amounts of protected areas and open space, and other critical ecosystem attributes, including research that illuminates the interactive and synergistic role of these attributes and their economic and social implications. 3) Methods for defining the scope of ecosystem restoration that reflect the cost to restore the quality and service characteristics. 4) Methods for valuation, including research that identifies ecosystem functions of value to society and addresses issues of time, scale, and natural and political boundaries.

*Normative Behaviors and Environmental Decision Making*
Researchers are encouraged to identify and examine behavioral and institutional factors that influence the development, implementation, and evaluation of environmental policies. Research is expected to be theoretically and methodologically sophisticated and to contain an empirical component. Psychological attitudes, socio-cultural, legal, and ethical norms, economic forces, and political and communication activities, in isolation and altogether, affect the development and use of environmental policy. Better understanding of these factors and the ways in which they can improve or interfere with social negotiations about environmental issues is needed. Potential topics include, but are not limited to: 1) Identification and characterization of communities and the values and normative behaviors that influence their responses to new environmental information, proposed development plans and regulations, and of processes to involve communities in developing and assessing criteria for decision making about environmental and economic investments and problems. 2) Identification and analysis of social, political, and ethical factors relevant to environmental problem-solving in a trans-jurisdictional context, and effective mechanisms for addressing those factors. 3) Implications of geographical and political boundaries and personal, group, and organizational characteristics, behaviors, and attitudes for environmental problem solving. 4) Comparative analysis of different models of environmental decision making that emphasizes their descriptive, predictive, and prescriptive implications.

**Closing Date: 5/7/96.**

**Contact:** Gregory G. Ondich, 260-5753
(ondich.greg@epamail.epa.gov)

The complete packages for the abstracts listed here can be found on EPA's internet Home Page under "Grants." EPA internet address on the World Wide Web is WWW.EPA.GOV

More information can also be obtained by writing to:

**U.S. Environmental Protection Agency**
**NCERQA - Grants Information**
**Mail Code 8701**
**401 M Street, SW**
**Washington, DC 20460**

## DOE/EPA/NSF/ONR JOINT PROGRAM ON BIOREMEDIATION

### Introduction

In the past the goal for cleanup of toxic and hazardous waste sites has been the complete removal of the hazardous chemicals, and regulation has been based on that goal. For bioremediation this meant complete mineralization of wastes to carbon dioxide, water, and inorganic materials. It has become clear, however, that this goal is frequently unrealistic and unnecessary. There are alternative endpoints that can protect ecosystems and human health. Since one of the principal factors controlling biodegradation processes is bioavailability, research which examines the bioavailability of contaminants in waste matrices, the potential for toxic effects of various intermediate metabolites during biodegradation of wastes, and interactions between waste chemicals and organisms in their environment is urgently needed. The overall goal of such research should be to better understand the various factors that will impact the risk to ecosystem and human health of waste chemicals and their degradation products during the process of bioremediation so that the regulatory climate can be fine-tuned to take into consideration the possibility of alternatives to complete mineralization. Such research ultimately could lead to the identification, development, and field testing of bioremediation technologies.

### Program Description

Research proposals are solicited that aim to further our understanding of the chemical, physical, and biological processes influencing the bioavailability and release of chemicals in soil under natural conditions, as well as the role of a chemical which when released from the soil and assimilated by a living organism, results in an adverse effect. The objective of the research should be to understand the commonality of processes and/or environmental effects involved in contaminant release, movement, and assimilation in order to determine broadly applicable techniques for measuring the potential impacts of contaminants in complex matrices.

The emphasis in proposed research projects should be on the behavior of mixtures of chemicals. Interdisciplinary research is particularly encouraged. While studies on chemicals that may affect ecosystem and human health are desired, toxicological studies are not eligible. Similarly, studies involving pure cultures in the laboratory or bioreactors will not be reviewed. Laboratory studies must demonstrate applicability to field studies. A number of well-instrumented, characterized, and documented sites are available for field research. Some examples and contact individuals are:

- Various Department of Energy sites
  Contact: D. Jay Grimes, 301-903-4183
  darrell.grimes@oer.doe.gov

- The U.S. Navy's Port Hueneme, CA, site
  Contact: Ernest Lory, 805-982-1299
  elory@nfesc.navy.mil

- McClelland Air Force Base, California
  Contact: Kevin Wong, 916-643-0830, ext. 159
  wong.kb@sma1.mcclellan.af.mil

- San Diego Bay
  Contact: Sandra Harrell, 619-553-5330
  meso@nosc.mil

- Wurtsmith Air Force Base, Michigan
  Contact: Michael Barcelona, 313-763-9666
  mikebar@engin.umich.edu

- Dover Air Force Base, Delaware
  Contact: Charles Mikula, 302-677-6845
  FAX: 302-677-6837

A more detailed statement of interagency interests and priorities in bioremediation research can be found in the Environmental Biotechnology chapter of the recent National Science and Technology Council (NSTC) report, Biotechnology for the 21st Century: New Horizons [http://www.nalusda.gov/bic/bio21]. Applicants specifically interested in research at Department of Energy sites should peruse the Natural and Accelerated Research (NABIR) Program Plan (DOE/ER-0659T, access NABIR through http://www.er.doe.gov/production/oher/NABIR/cover.html). The program elements, Biogeochemical Dynamics and Community Dynamics and Microbial Ecology are those most closely aligned with this EPA/NSF/DOE/ONR Joint Program on Bioremediation.

## Who May Submit

Academic and not-for-profit institutions located in the U.S., and state or local governments are eligible to apply. Profit-making firms are eligible only under certain laws, and then under restrictive conditions, including the absence of any profit from the project. Federal agencies and federal employees are not eligible to participate in this program. Potential applicants who are uncertain of their eligibility should contact EPA's Grants Operations Branch at (202) 260-9266. All potential applicants are encouraged to contact one of the agency representatives, identified below, before submitting a formal proposal.

## Awards

Proposals may request funding for projects with a duration not to exceed three years and a total budget not to exceed $500,000. The EPA is the lead agency in this effort and although proposals submitted in response to this Interagency Announcement will be sent to EPA, the participating agencies will jointly manage the review and administration of the program. Final selection of awardees by the agencies will be determined by the review panel's recommendations and programmatic considerations. Each award will be supported by a single agency. Overall estimated amount of funding is $5 M, depending on the availability of funds and the programmatic relevancy of recommended projects to the participating agencies. Each agency supporting an award will act as the sole administrative unit for that award. Principal Investigators may be requested to modify their budgets and work plans to comply with special requirements of the particular agency supporting their award.

## The Application

The EPA Application Kit for Assistance, which contains detailed instructions on how to prepare your application, should be used. The application kit is available at most institutional offices of sponsored research or may be obtained from EPA at:

U.S. Environmental Protection Agency
National Center for Environmental Research and Quality Assurance (8703)
401 M Street SW
Washington DC 20460
Phone: (202) 260-3837
Fax: (202) 260-2039

Each application must contain the following:

A. Application for Federal Assistance (Standard Forms 424 and 424A). These forms must have original signature.

B. A detailed, itemized budget for each year of the proposed project.

C. A budget justification describing the basis for calculating the personnel, fringe benefits, travel, equipment, supplies, contractual support, and other costs identified in the itemized budget.

D. An abstract containing the following information: The project title, the names and affiliations of all investigators, and a summary of the objectives, expected results, and approach described in the proposal. The abstract must not exceed one (1) 8.5 x 11 inch page of single-spaced standard 12 point type with 1 inch margins.

E. A Description of the Project. This description must not exceed fifteen (15) pages; All pages must be consecutively numbered, 8.5 x 11 inch, single-spaced standard 12 point type with 1 inch margins. The description must provide the following information (1-5):

   1. Objectives: List objectives of the proposed research and/or the hypotheses being tested during the project.

   2. Expected Results or Benefits: Describe the results you expect to achieve during the project and the benefits of success.

   3. Approach: Outline the methods, approaches, and techniques that you intend to employ in meeting the objective stated above.

   4. General Project Information: Discuss other information relevant to the potential success of the project. This might include facilities, project schedules, proposed management, interactions with other institutions, etc.

   5. Quality Assurance: A brief narrative statement (not to exceed two consecutively numbered, 8.5 x 11 inch pages of single-spaced standard 12 point type with 1 inch margins) describing the quality assurance procedures proposed for the project (see section of this RFA on quality assurance).

F. Any important attachments, appendices, references, or other information may be included but must not exceed five (5) pages. If site-specific agreements have been negotiated between the applicant and the owner of a waste site, include this as an attachment.

G. The resumes of the principal investigator, and co-workers. Resumes must not exceed two consecutively-numbered, 8.5 x 11 inch pages of single spaced standard 12 point type with 1 inch margins.

H. Standard Form (SF) 5700-48 Procurement System Certification (provided in Application Kit).

I. Standard Form (SF) 5700-49 Debarment and Suspension Certification (provided in Application Kit).

J. A list of key contacts (provided in Application Kit) including authorizing representative, payee, administrative contact, and project manager.

K. Disclosure of Lobbying Activities (provided in Application Kit).

L. Copy of State Clearing House Approval Notification (see Application Kit to determine if applicable).

M. The applicant must include a blank self-addressed, stamped post card with the application.

## Quality Assurance

Data sets resulting from environmental research often are used by government officials when establishing standards or when making other policy decisions. Explicit indicators of data quality are essential for determining whether a particular data set is appropriate for use in a specific context. To that end, grant-funded projects should address quality assurance. The application must include a quality assurance narrative statement, not to exceed two pages, which for each item listed below, either presents the required information or provides justification as to why the item does not apply to the proposed research.

- The intended use of the data and the associated acceptance criteria for data quality (i.e., precision, accuracy, completeness, and comparability).

- Project requirements for precision, accuracy, completeness, and comparability, and how these will be determined.

- Procedures for selection of samples or sampling sites, and collection or preparation of samples.

- Procedures for sample handling, identification, preservation, transportation, and storage.

- Description of measurement methods or test procedures, with a statement of performance characteristics if methods are non-standard.

- Standard quality assurance/quality control procedures (e.g., American Society for Testing Materials, American Public Health Association, etc.) to be followed. Non-standard procedures must be documented.

- Data reduction and reporting procedures, including description of statistical analyses to be used.

## Proprietary Information

By submitting an application in response to this solicitation, the applicant grants EPA permission to share the application with technical reviewers both within and outside of the Agency. Applications containing proprietary or other types of confidential information will be immediately returned to the applicant without review.

## Evaluation of Proposals

All grant applications are initially reviewed to determine their legal and administrative acceptability and responsiveness to this solicitation. Acceptable applications are then reviewed by a technical peer review group. This review is designed to evaluate and rank each proposal according to its scientific merit. The review group is composed primarily of non-government scientists and engineers who are experts in their respective disciplines. All reviewers are proficient in the technical areas that they are reviewing. The reviewers use the following criteria in their reviews:

- quality of the research plan (including theoretical and/or experimental design, originality, and creativity);
- qualifications of the principal investigator and staff, including knowledge of relevant subject areas;
- potential contribution of the research to advancing scientific knowledge in the environmental area;
- potential to enhance training and information transfer in the topic areas;
- availability and adequacy of facilities and equipment;
- budget justification — justification for equipment will receive special attention; and
- responsiveness to solicitation objectives.

Funding decisions are the sole responsibility of the participating federal agencies. Proposals may be recommended for funding by any of the participating agencies, at the agencies' option, not the proposer's. Grants are awarded on the basis of technical merit, relevancy to the research priorities outlined, program balance, and budget.

## How to Apply

To be considered, the original and ten (10) copies of the fully developed research grant application and five (5) additional copies of the abstract (fifteen in all), must be received (postmarked if sent by U.S. Mail) by the National Center for Environmental Research and Quality Assurance no later than 4:00 P.M. EST on the closing date: May 1, 1996.

The application and abstracts must be prepared in accordance with instructions in the Application Kit for Federal Assistance and this RFA. Informal, incomplete, or unsigned proposals will not be considered. Completed applications should be sent via regular or express mail to:

U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research and Quality Assurance (8703)
Sorting Code: 96-NCERQA-10
Room M2426
401 M Street SW
Washington DC 20460

Applications sent via express mail should have the following telephone number listed on the express mail label: (202) 260-3837

## Sorting Code

In order to facilitate proper assignment and review of applications, applications must be identified by printing the Sorting Code **96-NCERQA-10** in block 10 of the SF-424.

## Contacts

Additional general information may be obtained by contacting:

U.S. Environmental Protection Agency
National Center for Environmental Research and Quality Assurance (8703)
401 M Street SW
Washington DC 20460
Phone: (202) 260-3837
Fax: (202) 260-2039

Applicants with technical questions may contact the appropriate individual identified below.

Dr. Robert E. Menzer:
menzer.robert@epamail.epa.gov
fax (202) 260-0929, voice (202) 260-5779

Dr. Joann Roskoski:
jroskosk@nsf.gov
fax (703) 306-0367, voice (703) 306-1480 Ext. 6421

Dr. D. Jay Grimes:
darrell.grimes@oer.doe.gov
fax (301) 903-8519, voice (301) 903-4183

Dr. Anna Palmisano:
palmisan@onrhq.onr.navy.mil
fax (703) 696-1212 , voice (703) 696-4986

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## ENVIRONMENTAL PROTECTION AGENCY 1996 GRANTS FOR RESEARCH

### Introduction

The U.S. Environmental Protection Agency (EPA) invites research grant applications in the following areas of special interest to its mission:

1. Ecological assessment

2. Exposure of children to pesticides

3. Air quality

4. Analytical and monitoring methods

5. Drinking water

6. Environmental fate and treatment of toxics and hazardous wastes

7. Environmental statistics

8. High-performance computing

9. Exploratory research, including Early Career Research Awards

This invitation provides relevant background information, summarizes EPA's interest in the topic areas, and describes the application and review process.

## Background

During fiscal year 1995 EPA increased funding for its investigator-initiated research grants program. For fiscal year 1996, EPA anticipates a second increase, subject to the 1996 Federal appropriation process. Therefore, EPA is issuing this Request for Applications (RFAs) which summarizes its programs. Additional programs will involve cooperation with the National Science Foundation and other agencies and will be announced separately. In cooperation with the National Science Foundation, three areas of interest to both agencies are identified - watershed protection and restoration, technology for a sustainable environment, and decision-making for environmental policy. EPA, NSF, DOE, and ONR intend to collaborate in an RFA on bioremediation. Separate solicitations on "endocrine disruptors" and "risk-based decisions for contaminated sediments," possibly jointly with other agencies, will be announced later.

## EPA Mission and R & D Strategy

The mission of EPA - and its unique role - is the protection of both environmental quality and human health through effective regulations and other policy implementation.

Achievement of this mission requires the application of sound science to the assessment of environmental problems and evaluation of possible solutions. A significant challenge is to support both long-term research that anticipates future environmental problems as well as to fill significant gaps in knowledge relevant to meeting current Agency goals. This Request for Applications and the joint solicitations with other agencies are important steps toward ensuring that EPA can provide a sound scientific foundation as the country enters a new generation of environmental protection.

EPA recently reorganized its research programs to focus on the reduction of uncertainty associated with risk assessment and reduction of risks to human health and ecosystems. Through its laboratories and through grants to universities and other not-for-profit institutions, EPA will promote research in both domains, according the highest priority to those areas where risk assessors are most in need of new concepts, methods, and data. At the same time, EPA will foster the development and evaluation of new risk reduction technologies across a spectrum, from pollution prevention, through end-of-pipe controls, to remediation and monitoring. In all areas, EPA is interested in research that recognizes issues relating to environmental justice, the Agency's effort to achieve equal protection from environmental and health hazards for all people without regard to race, economic status, or culture.

## Research Topics of Interest

### *1. Ecological Assessment*

### 1.A. Regional Ecosystem Protection and Restoration

#### Background

The Agency's goal for protecting ecosystems is to restore and maintain the "health," biological diversity, and sustainability of ecosystems while supporting sustainable economies and communities. The specific purpose of this solicitation is to request proposals that lead to the development of scientific understanding and techniques required for effective ecological risk assessment and ecosystem protection at a regional ecosystem scale. Proposals at the watershed scale are being solicited in the joint EPA-NSF Water and Watersheds competition.

Description

While a broad consensus exists among scientists and managers on the utility and need for integrated ecosystem management, most recognize that our ability to implement ecosystem protection concepts is limited by inadequate understanding of the interaction of ecosystems. The Agency's primary focus in this solicitation is to fund research that ultimately will reduce the uncertainty in conducting ecological assessments at multiple ecological scales -- watershed (or an equivalent biogeographical unit) scale, regional scale, and national scale assessments. The research is intended to improve the Agency's ability to conduct ecological assessments using the following paradigm: (1) monitoring the current and changing conditions of ecological resources from which the success or failure of ecosystem protection can be judged without bias; (2) understanding more fully the structure and function of ecosystems to develop improved management options; (3) modeling to predict the response of ecosystems to changes resulting from human-induced stress from which possible ecosystem management strategies can be assessed; and (4) assessing the ecological consequences of management actions so that decision makers can best understand the outcome of choosing a particular management strategy.

This assessment paradigm must be applied at multiple scales to address the full spectrum of ecological assessment and management needs. Watershed-scale assessments tend to rely on relatively complete characterization of stressors and endpoints within watersheds, and deterministic linkages among stressors and endpoints are often driven by atmospheric and hydrologic transport, research on which will be solicited in a separate RFA in cooperation with the National Science Foundation.

On a broader basis, some ecological assessments and management issues require analyses at a regional scale. Relevant issues may include assuring that sufficient habitat or breeding populations exist over a region to insure sustainability of populations and ecosystems. Considerations such as habitat, biodiversity, and the introduction of exotic species may be important. Resource availability and quality should be considered. Regional-scale assessments tend to focus on how and if the sum total of watershed-scale management efforts protect or restore the sustainability of an ecological resource. Models and data collection at this scale tend to rely more on statistical sampling, remote sensing, and spatial analyses. Management may be complicated by the existence of multiple political and environmental jurisdictions within a region. Management at the regional scale will challenge the institutional and intellectual infrastructure.

An even broader scale is the national scale. This category of ecological assessment and management recognizes that some ecological issues require long-term management actions. Examples include global change, establishment of national air, water, or sediment quality criteria, or even the further development of the generic process for assessing risks. Within each scale, the focus of the research should be on reducing the uncertainty in ecological risk assessment.

While the distinction between scales is somewhat arbitrary, public interest is focused on managing and sustaining many important regional-scale systems across the country. Although the Agency has identified a number of areas throughout the country that represent important places that would benefit from the results of research contemplated in this solicitation, the following systems are noted for their current emphasis, in Agency priority order: (1) the Gulf of Mexico (including the South Florida area); (2) the Pacific Northwest; (3) the Mid-Atlantic Highlands; (4) the Great Lakes; (5) the Chesapeake Bay; (6) the Great Plains; and (7) the Arid Southwest. In addition to these places, each of the Agency's regional offices has an active list of needs for place-based studies that applicants may want to consider in developing their proposals.

To achieve the research goal set forth in this solicitation the Agency believes a number of key scientific questions should be addressed. The Agency is interested in how each applicant would design a research program to address these or related issues in the systems identified above.

- What are the appropriate ecological units for analysis at various scales?
- What are the appropriate indicators that can be used for monitoring and assessing ecosystem condition and how does scale affect the choice of indicators?
- How does one characterize and measure sustainability of ecological systems?
- How are systems likely to respond to changes in stressors, and what level and type of change can be attributed to anthropogenic stress?
- What types of ecological issues and functions must be addressed at each spatial scale?
- What mix of management actions will most efficiently achieve desirable ecosystem conditions?
- How explicitly can the problem of limited data be dealt with (e.g., use of structured expert judgements)?
- How can knowledge (e.g., ecological indicators) be extrapolated from one place to another and from one timeframe to another?
- What are appropriate techniques for diagnosing ecosystem condition?

This solicitation is based on the concept that the fundamental unit in assessing ecosystems is an "area," e.g., the habitat, an ecoregion, a landscape, a biome. Furthermore, given EPA's holistic environmental perspective, we will probably never assess and manage whole ecosystems (e.g., forests) separately, but instead will manage ecosystems as parts of the landscape mosaic in which they fit.

Instrument: Applicants may apply for grants on their own behalf or establish interdisciplinary teams. Proposals involving multiple institutions are encouraged but are not necessary. Proposals representing research consortia should clearly identify the lead institution and the basis for allocating research funds.

### 1.B. Global Climate Change

Background

Making informed decisions on the risks of global change is critically dependent on understanding how climate change impacts resource systems and their related economic and sociopolitical sectors. Quantifying the vulnerabilities, the potential beneficial and adverse effects, of natural systems and regional economies to climate change, including climate variability, is a major responsibility of EPA's Global Change Research Program. The interdependency of these disciplines can be captured using an integrated assessment approach.

Description

This solicitation seeks research proposals that address regional scale vulnerabilities in the United States to Global Climate Change (e.g., Southeast, Great Plains, and U.S. Caribbean or Pacific Islands) with an integrative emphasis. Proposals should be based on and use existing data and assessments when appropriate. Consortia of broadly-based inter-disciplinary researchers are encouraged to address areas of concern, such as (but not limited to) the following:

- Development and demonstration of an integrated assessment methodology that can provide a framework and a process for organizing and interpreting diverse sets of technical, social, and economic information to support policy decision-making;

- Ecological and hydrological responses in the coastal zones, lakes, and rivers due to changes in sea level and precipitation, and associated impacts on habitats, water supply, natural resources (forest/agricultural products, commercial/recreational fisheries, tourism), and public health (increased incidence and areal spread of vector-and water-borne diseases) caused by climate change.

- Economic assessment of impacts, and relative risk of climate change versus other anthropogenic stressors.

Funding: Up to $12 million is expected to be available in fiscal year 1996 for awards in this program (1.A and 1.B) with approximately $8 million for area 1.A and $4 million for area 1.B. While there are no limitations on the amount of funds requested in each proposal, research that involves complex multiple-scale issues may be in the $1-2 million/year range ($3-6 million for a three-year proposal). Proposals in the $100,000-$500,000/year range are also encouraged where appropriate. Proposals that focus on specific regions are encouraged. Duration of awards may be up to 3 years.

### 2. *The Exposure of Children to Pesticides*

In its report, "Pesticides in the Diets of Infants and Children," the National Research Council (NRC) recommended that estimates of total pesticide exposure should account for all sources and pathways of pesticide intakes and should reflect the unique characteristics of the diets of infants and children. The NRC concluded that children may be exposed to multiple pesticides exhibiting a common toxic effect. Therefore, estimates of risk would be improved by accounting for these simultaneous exposures. They also concluded that differences in exposure between adults and children were more likely to account for differences in risk than were age-related differences in toxicity. Based on these findings, the EPA is interested in stimulating research on children's exposure to pesticides. Results of this focused research will likely have broad applications in improving the Agency's ability to assess pesticide exposures and their associated health risks. Future solicitations will focus on other areas of research related to the effects of pesticides on children.

Specifically, there is a need for information on children's cumulative exposure to pesticide classes such as, but not limited to, pyrethroids, cholinesterase inhibitors, and triazine herbicides. It is also important that this information be collected using a method that treats children as a unique sub-population and not simply as "small adults." Therefore, the EPA is seeking investigator-initiated grant proposals that address one or more of the following topics related to children's exposure:

- Development of approaches for assessing children's exposure to the pesticides of interest via multiple pathways and routes (e.g., inhalation, dietary and non-dietary ingestion, and dermal contact). This research should emphasize age-related differences and characteristics of child behavior in dietary habits, hand-to-mouth activities, and contact with contaminated surfaces and objects.

- Research that evaluates and compares children's exposures to pesticides resulting from various sources (e.g., agricultural food application, residential lawn treatment, indoor residential uses, pet uses) and apportions the exposure and potential dose.

- The development of methods for assessing cumulative exposures to specific classes of pesticides. This should include methods to determine the temporal nature of various sources and the resulting impact on exposure.

Funding: Up to $3 million is expected to be available in fiscal year 1996 for awards in this program area. The projected award range is $100,000-$200,000/year for up to 3 years.

### *3. Air Quality*

#### 3.A. Ambient Air Quality

Certain widespread air pollutants, such as ozone and air toxics, continue to pose serious public health risks for susceptible members of the U.S. population or risks to sensitive ecosystems. The Clean Air Act (CAA) requires that EPA establish and periodically review and revise, as appropriate, criteria and National Ambient Air Quality Standards (NAAQS) for pollutants such as ozone. The Act also requires State Implementation Plans (SIPs) to be prepared, which describe control strategies that State and local authorities will employ to bring nonattainment areas into compliance with the NAAQS.

In addition, the CAA requires control of toxic air pollutant emissions from sources. The Act prescribes a phased approach to regulate both major and area sources of air toxics. The control program for major sources is a technology-based control program that mandates the use of Maximum Achievable Control Technology (MACT) for major sources emitting one or more of 189 listed hazardous air pollutants (HAPs). A strategy for controlling the 30 most hazardous toxic pollutants in urban areas is also mandated.

The EPA is seeking investigator-initiated grant proposals aimed at generating new knowledge in these two major topic areas – tropospheric ozone and air toxics.

Description

3.A.1. Tropospheric Ozone

Tropospheric ozone research is being coordinated through the North American Research Strategy for Tropospheric Ozone (NARSTO), an emerging public/private sector cooperative ten-year research effort to both improve the technical understanding of the tropospheric ozone issue and support future evaluations and adjustments to attainment strategies. The EPA/ORD contribution to the NARSTO program emphasizes the areas of atmospheric chemistry and modeling, ambient measurement methods and emissions research.

The EPA has also been a principal participant in the university-based Southern Oxidants Study (SOS) since 1991. Thirty-five Federal, State, and industry organizations and 24 universities cooperate in this regional research program. EPA sees a continuing research need in several critical areas related to the SOS effort. Published reports on SOS and its data sources are available from the National Exposure Research Laboratory, MD-80, Research Triangle Park, NC 27711 (contact: Dr. Basil Dimitriades, phone 919-541-2706).

This RFA is targeted to research needed in the following areas:

Atmospheric Chemistry

- Laboratory studies to elucidate the products formed during the oxidation of biogenic VOCs and aromatic VOCs under atmospheric conditions, the reactions of olefins with $O_3$ and $NO_3$, and the reactions of OH radicals with higher molecular weight alkanes and alkenes.
- Laboratory studies of the kinetics and stoichiometry of reactions of high molecular weight organic peroxy radicals, and the reaction of peroxy radicals with $NO_x$-forming organic nitrogen reservoirs.
- Smog chamber and modeling studies to develop advanced mechanistic models for atmospheric oxidant formation.
- Laboratory investigations of the role of heterogeneous and aqueous-phase processes on gas-phase oxidant production and nitrogen oxides/nitrate chemistry.

Modeling Research

- Studies to explore boundary layer turbulence, vertical mixing, and cloud processes, and their interactions with atmospheric chemistry.
- Research to develop and test quantitative techniques for assessing errors or uncertainties in physical and chemical processes (e.g., meteorology, deposition, photochemistry, and emissions) that affect concentration estimates from ozone air quality modeling systems.
- Studies to develop and test innovative techniques to evaluate the functioning of physical and chemical processes in ozone air quality modeling systems.
- Monitoring and observations-based approaches to investigate the photochemical ozone problem and evaluating/developing emissions control strategies; use of existing SOS databases to develop/test approaches.
- Developing and diagnostically evaluating emissions-based modeling which focuses on interactions of urban area and point source plumes with the surrounding regional atmosphere; use of existing SOS databases for model development and evaluation.
- Developing air pollution prediction systems to provide real-time forecasting of ozone air quality.

Ambient Measurement and Analysis Methods

- Studies that may lead to new, more sensitive techniques for ambient measurement, on short time scales, of chemically-significant trace gases (e.g., ozone, hydrocarbons, oxides of nitrogen, carbonyls and key radical species) participating in the photochemistry of ozone
- Development of innovative in-situ and remote-sensing measurement methods for using ambient concentration and meteorological measurements in assessing the potential ozone response to local changes in precursor emissions/concentrations

- Instrument methods development studies or development of innovative data analysis techniques applicable to PAMS (Photochemical Assessment Monitoring Stations) objectives for cost-effective and accurate monitoring

### Emissions

- Studies of biochemical and physiological fundamental mechanisms linking seasonal and other significant variations in biogenic VOC emissions from important genera; field studies to assess the validity of the newly proposed mechanisms.

- Developing improved algorithms for biogenic ozone-precursor emissions estimation.

- Research, development and field assessments of tunable laser or other fast response techniques for remotely measuring ozone precursor emissions from fugitive emission concentration fields and from on-road, in-operation mobile source emissions.

- Studies that explore the sub-grid scale uncertainties of representing urban and point source emissions within air quality modeling systems.

## 3.A.2. Air Toxics

The Clean Air Act (as amended in 1990) prescribes a phased approach to regulate air toxics emissions from pollutant sources. The first phase is a broad, technology-based control program based on Maximum Achievable Control Technology (MACT) for major sources emitting one or more of 189 listed hazardous air pollutants (HAPs). The second phase, a risk-based control program, will address significant residual risks from major sources and risks posed by small, area sources.

In addition to the regulations for major sources, section 112(k) of the CAA mandates EPA to develop a national strategy which identifies the 30 hazardous air pollutants emitted from area sources which pose the greatest public health threat in the most urban areas. The strategy must assure that the sources accounting for 90 percent of the emissions of the 30 pollutants are subject to standards and that the estimated cancer incidence attributable to exposure to these pollutants is reduced by 75 percent. The proposals submitted in response to this RFA will provide data valuable for both residual risk determinations and the urban area source strategy.

### Urban Air Toxics

There is almost no direct observational evidence (i.e., epidemiologic data) linking health effects and ambient HAPs exposures. In part, this is due to limited exposure methods and data and the expense of adequate epidemiologic studies. It is hoped that recently developed epidemiologic approaches may be useful in overcoming some of the traditional difficulties in this area, e.g., biomarkers, new statistical methods. It is the intent of this program to solicit research focusing on the urban toxic air problem.

A need exists to address the risks that may be posed by toxic contributions to the effects of urban mixtures ("urban soup") and/or risks that may be posed by individual and mixtures of toxic chemicals from large sources of pollution. EPA is seeking answers to the following key questions:

- Are there public health risks that result from a) exposures to recurrent acute exposures from both point and area sources, b) chronic exposures from individual facilities or the combined exposures from multiple facilities, and c) mixtures which impact the same or different organ systems?

- Can susceptible subpopulations be identified that are at increased risk due to higher exposures or biological sensitivities?

- What are the emissions of air toxic pollutants from sources of concern in urban areas?

To answer these questions EPA seeks research that uses a multi-disciplinary approach to investigate source identification and characterization, exposure characterization (modeling/monitoring), and characterization of health outcomes as related to exposure. Research that addresses all three topics in an integrated study is preferred; however, source characterization for air toxics and epidemiology (health and exposure) can be considered separately. No consideration will be given to proposals that address only health or exposure.

### Great Waters Air Toxics Loadings

Research is needed to reduce the uncertainty in estimating the contribution of atmospheric transport and deposition to overall loadings of toxic substances in the Great Lakes and the Chesapeake Bay. Work to date has focused principally on the transport and fate of mercury compounds in their different phases. Additional work has addressed polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and pesticides. Much of the work has centered on the Chicago and Baltimore urban areas in the Lake Michigan and Chesapeake Bay regions, respectively.

The Agency is interested in proposals to reduce uncertainties in estimating the atmospheric transport and deposition of hazardous air pollutants into Great Waters regions. Specifically proposals are requested for research devoted to different Great Waters regions or other hazardous air pollutants in the Lake Michigan and Chesapeake Bay regions.

### Ecological Effects

Natural ecosystems are comprised of a mix of interacting species that compete for resources as they complete their life cycles. Ecosystems are exposed to a range of atmospheric pollutants that occur both singly and in combination. Individual plant response to pollutant stress varies by species, stage of development, and the presence of other stresses (e.g., insect and fungal pathogens, nutrient stress, water stress). However, individual species response to air pollution is not always reflective of overall ecosystem response since individual species respond differently depending on their competitive environment. Therefore, ecosystem sensitivity to pollutant stress is complex and needs to be studied across broad spatial and temporal scales.

Research to evaluate ecosystem response to pollutant stress is needed to address a number of questions in several areas:

- how does vegetation respond to co-occurring natural and/or anthropogenic stresses?

- how does intra- and interspecific competition affect individual plant response to air pollutant stress?

- how does stage of plant development and timing of pollutant exposure affect species response to air pollutants?

- how do long-lived species, exposed to pollutants year after year, integrate pollutant damage over time?

- what is the response of plant communities exposed to air pollutant stress?
- what are appropriate indicators of ecosystem response to air pollution?

Research should not be limited to single species; rather, the approach should address ecosystem response from an overall ecosystem perspective, as measured by factors such as a loss in overall ecosystem productivity, shifts in species composition or loss of species, overall growth reductions of pollutant sensitive individuals, or increased incidence of damaging agents (e.g., pests or pathogens). The research should include both controlled exposures of species mixtures and field plots.

### 3.B. Indoor Air Quality

The 1986 Superfund Amendments and Reauthorization Act (SARA) Title IV directs EPA to conduct and support research on indoor air quality. An important aspect of this effort is research to develop and evaluate risk management methods to reduce risks associated with indoor exposures to air pollutants, including biocontaminants, which are of particular concern because they are common cause of building-related illnesses.

EPA is seeking proposals targeted at techniques to reduce indoor exposures to biocontaminants. EPA is particularly interested in studies to determine the effects of environmental factors such as temperature, humidity, dust level, air velocity, and substrate materials on the deposition, amplification, and dissemination of biological contaminants including fungi and dust mites. High priority research areas include 1) factors controlling the dust mite population in the indoor environment, 2) the influence of substrate and relative humidity on colonization of toxic fungi, and 3) factors controlling dissemination of fungal contaminants.

Funding: Up to $8.5 million is expected to be available in fiscal year 1996 for awards in this program area with approximately $7 million in area 3.A and $1.5 million in area 3.B. The projected award range is $50,000-$200,000/year for up to 3 years.

## *4. Analytical and Monitoring Methods*

### Background

The purpose of the program is to advance measurement science by stimulating research on radically new approaches to solving environmental monitoring problems.. In evaluating proposals, EPA will favor research that is likely to solve real world monitoring problems. To that end, EPA has identified several areas where current environmental monitoring technology is known to be inadequate The critical need is for measurement techniques that are inexpensive to purchase and inexpensive to operate and maintain and that also use little or no toxic chemicals and generate little or no hazardous waste. Also, any new technology should include whatever mechanisms are needed for the data to yield well defined levels of confidence. The focus of the proposals should be on new approaches rather than stepwise improvements to existing methodology. Such approaches might include the adaption of existing techniques from other, non-environmental fields that have yet to receive any attention in the environmental analytical community.

### Description

### 4.A. Field Analytical Methods

Development of measurement technologies that can be used in the field to permit more rapid decision making, to eliminate packaging and shipping samples to distant laboratories, and to yield more information for less money are urgently needed. Such technologies need to be portable, yield real time (i.e., within 4 hours) data, rugged, sensitive, and suitable for the wide variety of samples that are commonly analyzed (e.g., industrial wastes, industrial waste waters, incinerator stack emissions) and, if possible, be able to measure multiple pollutants simultaneously. In addition to the aforementioned applications, rapid field tests are also needed by personnel confronted with responding to crisis situations (e.g., spills and accidents). Examples of what is meant by field-portable, rapid results monitoring methodology include the recently developed and commercialized immunochemistry-based assays and hand held X-ray fluorescence spectrometers.

### 4.B. Continuous Measurement Methods

Major improvements in waste process/treatment control and environmental decision making could be made if more accurate, less costly, more rugged techniques were available which would yield continuous, or at least intermittent, data on pollutant concentrations in environmental media. Some monitoring situations where current methodology is known to be inadequate include the following: (Prospective applicants should consider this list to be suggestions to stimulate thinking rather than as criteria for evaluating proposals.)

- Toxic metal (particularly mercury) and/or organic compound emissions from high temperature, complex matrix sources such as incinerators.
- Release of volatile compounds from complex point sources or area sources (e.g., tanks, pipes, valves, landfills, contaminated soils) under ambient conditions.
- Toxic chemical concentrations in the air over a defined area such as a hazardous waste site, an industrial facility, etc.
- Organic and inorganic toxicants in municipal and industrial waste water on a continuous basis to eliminate the need to overengineer waste treatment facilities to ensure compliance with regulatory standards.
- Deposition or emission flux of toxic air pollutants, especially semi-volatile pollutants that exist both in the gas phase and on particulate matter.
- Continuous measurement of the mass of inhalable particulate matter ($PM_{2.5}$ and $PM_{10}$), semi-volatile organic toxicants, and $NH_4NO_3$ in the air while not also including the particle-bound water in the weight of material measured.
- Continuous mass measurements of particle-bound water in airborne particulate matter ($PM_{2.5}$ and $PM_{10}$).

### 4.C. Leachability Prediction

Still another critical area in need of innovative approaches is leachability prediction. Current methods for determining the leaching potential of waste materials are designed for determining whether a waste poses a hazard to ground water under specific improper disposal situations. They are not appropriate for assessing risk under other management situations. In order to better assess the potential risk posed by wastes under real world land management conditions and, therefore, permit the design of more cost-effective land management facilities, new methods are needed for characterizing the potential for toxic materials to migrate from waste materials that are destined for land management. One group of materials that pose a particular problem are those wastes that contain either a highly viscous or a non-newtonian liquid phase.

Funding: Up to $1 million is expected to be available in fiscal year 1996 for awards in this program area. The projected award range is $75,000 to $125,000/year with a duration of 2 or 3 years.

### *5. Drinking Water*

Background

The Safe Drinking Water Act (SDWA) requires that public water supplies be disinfected and that the U.S. Environmental Protection Agency (EPA) set standards and establish processes for treatment and distribution of disinfected water to ensure that no significant risks to human health occur. Scientific evidence suggests that exposure to chemical by-products formed during the disinfection process may be associated with adverse health effects. Reducing the amount of disinfectant or altering the disinfection process may decrease by-product formation; however these practices may increase the potential for microbial contamination. EPA's current challenge is to find the point of optimal disinfection, defined as the amount of disinfectant that will destroy the greatest number of the most pathogenic microbiological organisms while creating a residual level of chemical that is unlikely to cause other disease in humans.

This solicitation invites research grant applications in two areas of special interest to its mission:

- Microbial Pathogens in Drinking Water Systems
- Drinking Water Disinfection By-products (DBPs)

#### 5.A. Microbial Pathogens in Drinking Water Systems

The incidence of waterborne disease in the U.S. is highly uncertain. While the health effects caused by drinking water pathogens are generally known, limited information is available on the doses and conditions that produce effects. Also, little is known about the extent to which bacterial growth in the distribution system is a cause of waterborne illness. Research is needed in the following areas:

- Current methods for measuring *Cryptosporidium* and *Giardia* frequently produce inaccurate and highly variable recovery data, in part due to the small volume of water that can be practically analyzed. This has contributed to considerable uncertainty about the health risks associated with exposure to drinking water containing *Cryptosporidium* and *Giardia*, as has the lack of information about the viability of cysts and oocysts found in drinking water systems. Research is needed to develop practical, low cost, accurate, and specific methods to identify and quantify viable pathogenic cysts and oocysts in raw and finished drinking water systems.

- Dose-response models have been developed for *Cryptosporidium parvum*, *Giardia*, and several waterborne viruses; however, the validity of these models at low doses is unknown. Research is needed to evaluate the reliability of existing models at low dose exposures and whether dose-response models developed with animals can be translated to the existing human models.

- Research is needed to develop an understanding of the risks associated with exposure to primary waterborne pathogens (e.g., *Giardia*, *Cryptosporidium*, and enteric viruses) as a function of such susceptibility factors as age, nutrition, protective immunity, and behavioral patterns.

Application of Research Results

The information developed by research on the above elements of dose-response and exposure will be useful for human health risk assessments. Applicants should explicitly address the use of results in risk assessment. Applications that integrate

**research on the above elements within a risk assessment framework are invited in addition to applications on separate elements.**

### 5.B. Drinking Water Disinfection By-products

Public water systems disinfect drinking water with chlorine or alternate disinfectants. While chlorine reduces microbial risk, the use of chlorine creates new potential risks from disinfection by-products formed during the water treatment process. Research is needed in the following areas:

- Research is needed to improve methods for estimating human exposures to the by-products of different disinfection treatments. Proposals should address research on biochemical markers of human exposure and/or the development and validation of models of human exposure to DBPs. Please do not submit proposals for epidemiology studies.

- There is uncertainty regarding the appropriate markers of effects and susceptibility in both cancer and reproductive outcome epidemiology studies. Laboratory and/or field evaluations are needed of morphological, biochemical, and/or molecular alterations that may be useful as markers of effect and susceptibility. Please do not submit proposals for epidemiology studies.

- Research is needed to examine the feasibility of assessing the relative toxicity of DBP mixtures in drinking water (e.g., ozone/chloramines, chlorine/chloramines, and chlorine dioxide). Proposals may include such elements as: the feasibility of sample preparation; chemical analysis and assessment; and toxicological testing of mixtures.

- Research is needed to develop improved extraction procedures and advanced instrumentation to characterize the non-volatile and difficult to extract organic and inorganic DBPs. These procedures would be used in the development of methods to assess the frequency and magnitude of occurrence of by-products.

Application of Research Results

The information developed by research on the above elements of toxicity, dose-response, and exposure will be useful in human health risk assessments. Applicants should explicitly address the use of results in risk assessment. Applications that integrate research on the above elements within a risk assessment framework are invited in addition to applications on separate elements.

Funding: Up to $2.5 million is expected to be available in fiscal year 1996 for awards in this program area. The projected award range is $50,000 to $200,000/year with a duration of 2 or 3 years.

### *6. Environmental Fate and Treatment of Toxics and Hazardous Wastes*

Background

EPA is required to develop regulations and guidelines that will insure proper waste management and proper remediation of contaminated waste sites. While numerous improvements have been made to insure reduced risks to human health and the environment, and to reduce the cost of these activities, a number of technical problems remain. The EPA has an interest in advancing research to help develop more realistic risk assessments and more efficient and cost-effective cleanups through the development of new risk knowledge and site characterization and remediation technologies. This competition is intended to support research projects in two areas: (1) the fate and mobility of contaminants in soils and groundwater, and (2) assessment of risks of contaminated soils and treatment residuals.

### 6.A. Fate and Mobility of Contaminants in Soils and Groundwater

The interactions between subsurface geochemical and biological processes can have a profound influence on the mobility, fate, and bioavailability of organic and inorganic contaminants in soil and ground water. A thorough understanding of the processes (chemical, physical, and biological) is needed to accurately predict the influences of these processes on contaminants. This same understanding is also required to predict the impact of the contaminants on the subsurface (vadose zone and the saturated zone) and its ability to serve as a filter for protecting ground water and surface water. In addition, better measurement methods, including the ability to identify individual contaminants, are needed to determine more reliably the risks associated with the original contamination and the risk remaining when a cleanup effort has been completed. This component seeks to strengthen the scientific basis for estimating risk through improved scientific knowledge about the fate and transport processes that affect contaminants and our ability to detect and measure them. Results of this research should also improve our ability to develop new approaches to remediation. Examples of topics of interest are:

- Research to develop the ability to better predict the formation, degradation, and bioaccumulation constants of metal/organic complexes and organometallics and to develop equilibrium and kinetic sorption models for inorganic/organic metal species on environmental surfaces, both biotic and abiotic. A major focus of the research should be on contaminants and environmental settings typical of large, complex waste sites, e.g., mining sites, multiple industrial waste sites, and disposal in a single watershed, etc.

- Research to develop models for predicting the fate and sorption properties of dense non-aqueous phase liquids (DNAPLs) in a wide range of environmental settings.

- Research on the interactions between subsurface geochemical and biological processes to determine their influence on the mobility, fate, and bioavailability of contaminants, particularly DNAPLs, in soils and ground water to quantify the transformations taking place in the subsurface and the fluxes of materials to other ecosystem components (receptors) and to develop indicators of subsurface ecosystem status. A major focus of the research should be on indicators that can serve as markers for naturally occurring biodegradation at DNAPL sites or for identifying novel processes and mechanisms for the development of innovative subsurface remediation technologies.

- Research on geochemical and geophysical processes that have the potential to lead to the development of more effective technologies for the removal of DNAPLs from the subsurface.

- Research to develop methods and data to determine the properties and processes associated with subsurface contaminants that could be used to develop real-time measurement methods for determining the nature and extent of subsurface contamination problems and the progress of remedial actions to correct them and to develop prototype sensors based on these processes.

### 6.B. Assessment of Risks of Contaminated Soils and Treatment Residuals

The level of cleanup greatly affects the cost of remediation. Remediation levels must insure that human health and the environment are adequately protected. To accomplish these objectives in a cost-effective manner, data are needed about the risks of contaminated soils, treated soils and other solid matrices in the vadose zone. Techniques for cost-effectively measuring these possible impacts are also needed. Therefore, the EPA is soliciting proposals on one or more of the following topics:

- Research on methods for assessing the potential human health and ecological impacts of residual contaminants (e.g., incinerator ash or untreated mine waste tailings that remain in place). Of particular importance are techniques applicable to assessing mixtures of residuals from thermal and chemical treatment of complex, toxic organics such as PAHs and PCBs which go through multiple steps of degradation.

- Research on the factors influencing the availability of toxic metal or inorganic contaminants common at contaminated sites (e.g., CN, Cd, Hg, Cr(VI)). Example sources are mining operations, metal finishing sites, and other industrial operations. This research requires developing an understanding of the chemical, physical, and biological processes which influence the chemical form of the metal/inorganic, its mobility in the environment, and its assimilation by, and impacts on, human and ecological receptors.

Funding Level: Up to $2.5 million is expected to be available in fiscal year 1996 for awards in this program area. The projected award range is $50,000 to $150,000/year with a duration of up to 3 years.

### *7. Environmental Statistics*

The U.S. Environmental Protection Agency (EPA) is soliciting proposals to establish a National Research Center on Statistics and the Environment (the Center) by means of a five-year cooperative agreement. EPA's purpose in establishing the Center is to provide a national capability to identify and perform cutting-edge research in environmental statistics that will further application of statistics to the environmental sciences and facilitate the professional development of future environmental statisticians.

The Office of Research and Development (ORD) has ongoing research in environmental statistics, including the following examples: statistical methods for combining environmental information and for the design and evaluation of environmental monitoring networks, accounting for meteorological and co-pollutant effects on estimation of status and trends in air toxics; spatial sampling designs for hazardous waste site characterization; statistical environmental epidemiology and toxicology; development and evaluation of ecological indicators and indexes, including issues of aggregation and scale; data quality assurance; and statistical modeling, validation of biokinetic models, and methods for combining epidemiological and toxicological studies for environmental criteria assessment. ORD statisticians can serve as research collaborators, sources of problem issues, data, and experience with important environmental problems, and for the transport of research findings into applied environments. The Center is expected to interact actively with ORD research programs and scientists and to identify and explore other promising areas of research in collaboration with other partners. As EPA/ORD scientists are located at multiple sites nationally, a Center encompassing research activity at multiple, geographically diverse sites is envisioned.

Statistical science is crucial to environmental research at all stages of its development and analysis. Sound environmental decisions must be based on sound science which in turn must be based on appropriate, high quality data, data models, and data analysis. Statistical design and analysis techniques, including data quality objectives (DQO's), are central to environmental data collection programs. Statistical techniques often can identify and adjust for biases in data. When sufficient data are not available from one source, data and other quantitative information from multiple, disparate sources must be combined statistically. Environmental data are inherently spatial, and spatial statistical methods are needed to model and analyze environmental data; spatio-temporal methods are also needed. Computer models of environmental and other phenomena and environmental monitoring networks must be evaluated to identify embedded biases, sensitivities, or limitations, which then may be addressed. Environmental risks must be based and evaluated on sound notions of likelihood, duration, and intensity of exposure and the relationship of exposure to potential effects. Environmental regulation and criteria assessment will benefit from further developments in statistical meta-analysis and data synthesis. Environmental sampling methods, such as for hazardous waste site characterization, must be efficient and able to account for both false-positive and false-negative errors. Many of these needs require entirely new statistical methods or approaches. These and other examples motivate modern environmental statistics research and illustrate the need for a cutting edge, cohesive national research capability in environmental statistics.

Proposals should address the following issues: organization, location, leadership, and governance of the Center; scientific objectives over the five-year period; research to be undertaken during the first two years; areas and extent of proposed collaboration with ORD programs and scientists; anticipated interactions with other scientific fields and scientists, including evidence of past collaborations; computing and other scientific resources available or required; and, cost and cost sharing information, including identification of other potential sources of funds. Proposals will be rated on a scale of 100 points as follows: planned organization and leadership (10); scientific personnel (15); scientific objectives (15); research plan (20); interaction with ORD programs and scientists (15); interdisciplinary and other collaborations (10); computing and scientific resources available (5); and, cost, cost sharing, and other potential funding (10).

Funding: Approximately $1.0 million/year is expected to be available for a single award in this program area. The project period will be 5 years with a progress review by EPA during project year 3.

### *8. High Performance Computing*

#### Background

The Environmental Protection Agency, through its High Performance Computing and Communications (HPCC) program, is attempting to accelerate the evolution of high performance technologies and their applications to environmental management. As part of this effort, research has been implemented to develop a flexible framework to facilitate cross-media environmental modeling, risk assessments, and community decision making. In order to develop such a framework, a technology infrastructure is needed for rapid intelligent data access and synthesis, integrated visualization and geographical information systems capabilities closely tied to environmental modeling, and parallel computing and communications to support multi-disciplinary ecosystem risk assessments.

In the past, computational limitations and a single discipline approach to environmental assessment ignored the importance of cross-media effects. Numerous independent models and other software tools are available that deal with segregated aspects of the environment. This includes air and water quality, air-water surface exchange, hydrology, hydrodynamics, sedimentation, groundwater, bioaccumulation, ecology, and risk assessment. An integrated, expandable approach is needed to facilitate the evolution toward more comprehensive assessment tools made up of a large number of interoperable components.

Therefore, EPA is seeking proposals aimed at developing high performance computing technologies for use in environmental assessment and management. Of particular interest are proposals that target research on problem solving environments, parallel algorithms, and data access and analysis techniques. All technology advances should be demonstrated in a results-oriented testbed that specifically addresses cross-media ecosystem management capabilities to support community-based environmental assessments.

### 8.A. Problem Solving Environments

Problem solving environments (PSE) provide a broad range of computational capabilities to address a specific class of problems. This enables inexperienced people to accomplish tasks they could not have done otherwise and assists experienced people to accomplish more difficult tasks more rapidly. This research is targeted to explore fundamental technology components required to facilitate software reuse, data sharing, and geospatial modeling and decision support within the context of environmental management. Without software reuse it is not practical for one group to build the complex software needed for cross-media environmental applications. Proposals should address one or more of the following objectives:

- Explore conceptual data models that encompass all data types required for cross-media environmental assessment and decision making. To test the robustness of the data models by developing reusable scalable input/output (I/O) class libraries to support development of interoperable cross-media environmental modeling and decision support frameworks including geospatial data for integrated visualization and geospatial analysis.

- Explore and evaluate alternative techniques for full integration (close coupling) of geospatial analysis, environmental modeling, and object oriented databases involving very large three dimensional, time and space varying data.

- Develop scalable parallel I/O techniques for object oriented data bases, I/O mechanisms to support data reordering, fast queries over distributed databases and archives, and I/O for binary large objects.

- Develop reusable object-model-based class libraries for parallel numerical solvers and science processes related to cross-media modeling, uncertainty, and risk assessment.

### 8.B. Parallel Algorithms

As environmental science and computational capabilities advance, research is targeting the linkage of several process models to achieve cross-media management objectives. For example, a manager may wish to evaluate the simultaneous impacts pollution on air quality, surface and groundwater hydrology, sediments, biota, and other processes in an ecosystem. Currently, issues of spatial and temporal scale and computational feasibility have limited advances in this area. EPA is requesting proposals to explore scalable parallel approaches for effective coupling among water, air, soil, terrestrial, and ecological models and research on issues of scale and resolution that affect the computational feasibility. Proof of concept and research-prototype development of coupled models in a scalable parallel computing environment are important components of the research. Proposals should address one or more of the following objectives:

- Evaluate performance characteristics of alternative domain decomposition approaches and scalable parallel algorithms for multi-media (air, water, soil, terrestrial systems, etc.) environmental modeling, coupled air-water exchange processes, and/or associated uncertainty and risk computations.

- Develop scalable parallel algorithms for adaptive grid approaches and evaluate the preservation of accuracy with the interaction of regular and irregular grid systems in the context of cross-media environmental assessments.

- Devise methods for optimization problems involving non-linear processes, develop scalable parallel algorithms for efficient implementation, and explore the accuracy of sampling strategies for non-linear response space.

### 8.C. Data Access and Analysis Techniques

A wealth of environmental data from diverse sources at multiple scales exists and continues to accumulate each day. Scientists, policy makers, industry, and the general public have diverse needs for data access, manipulation, summarization, and interpretation. Intelligent and effective methods are needed to satisfy the extensive need for environmental data to support environmental management activities. Proposals should address one or more of the following objectives:

- Develop techniques for exploring multiple-scales and cross-media environmental data. Research could include:

    - Agent facilitated data queries of distributed data sources, methods for organizing standard metadata for fast queries, capabilities to handle legacy data, dynamic analysis of very large distributed archives of diverse multi-scale data useful for environmental decision making.

    - High performance data assimilation techniques supported by scalable parallel I/O systems to enable the integration of remote sensing data into predictive models to enhance the quality of model predictions.

    - Multivariate analysis and visualization techniques over three dimensional space and time, and techniques for desktop virtual environments for analysis of time sequences of three dimensional environmental data.

Instrument: Proposers may apply for grants on their own behalf or establish interdisciplinary teams. Proposals that support collaborative disciplinary or multidisciplinary research or comprehensive system studies needing multidisciplinary teams from a single or a number of institutions are all encouraged but are not necessary. Proposals representing research consortia should clearly identify the lead institution and the basis for allocating research funds. Investigators who wish to take advantage of the current ecosystem research capabilities at EPA's research laboratories are encouraged to contact and collaborate with the appropriate laboratory. Successful proposals that collaborate with EPA will be awarded as cooperative agreements.

Funding: Up to $3 million is expected to be available in fiscal year 1996 for awards in this program area. The projected award range is $100,000-$200,000/year for up to 3 years.

## *9. The General Solicitation*

### 9.A. Exploratory Research Grants

The U.S. Environmental Protection Agency (EPA) through its National Center for Environmental Research and Quality Assurance (NCERQA) is seeking grant applications to conduct exploratory environmental research in areas of Biology, Chemistry, Physics, Human Health, Socioeconomics, and Engineering which are not covered in the specific RFAs described above. Investigator-initiated research projects which focus on aspects of pollution identification, characterization, abatement, or control or the effects of pollutants on human and biological systems are sought.

The mission of EPA is to provide environmental policies, risk assessments, pollution prevention programs, and effective regulations based on sound science. NCERQA is committed to providing the best possible products in areas of research and engineering technology through significant support for long-term research that anticipates future environmental problems and strives to fill significant gaps in knowledge relevant to meeting regulatory goals and protecting the environment. In part, these goals may be accomplished through this competitive, peer-reviewed extramural program in which investigator-initiated projects in basic or fundamental research can forge solutions to environmental problems and EPA can benefit from close cooperation with the scientific community.

Funding: Up to $6 million is expected to be available in fiscal year 1996 for new exploratory research grants. The projected award range is $75,000-$125,000/year for up to 3 years.

### 9.B. Early Career Research Award Program

Background

The U.S. Environmental Protection Agency (EPA) announces the initiation of the Early Career Award Program to support outstanding scientists and engineers at the onset of their careers in America's colleges, universities, and not-for-profit institutions. This competition is a component of the Exploratory Research Grants Program and applicants should prepare their proposals accordingly. The Early Career Award Program embodies the high priority placed by EPA on maintaining the leadership position of the United States in environmental science by producing outstanding researchers and nurturing their continued development.

Eligibility

The Early Career Research Award Program is open to U.S. citizens and permanent residents in academic or not-for-profit institutions who received their graduate degrees (Ph.D. or equivalent), completed post-doctoral programs, or entered a tenure-track position at an academic institution on or after May 1, 1991.

Scope

Research topics are open to all areas of environmental science and engineering related to human health risk assessment, ecological risk assessment, and pollution prevention and reduction. As with the Exploratory Research Grants Program, research in biology, chemistry, physics, human health, socioeconomics, and engineering is inclusive. The grant awards are subject to the same regulations and guidelines as the Exploratory program.

Funding: Up to $1.0 million is expected to be available in fiscal year 1996 in this program area. The projected award range is $75,000-$100,000/year with a duration of 5 years.

### *The Application*

The following instructions apply to all areas described above.

Proposed research projects must be designed to advance the state of knowledge in the indicated areas. The Application Kit for Assistance contains detailed instructions on how to prepare your application. The application kit is available at most institutional offices of sponsored research or may be obtained from EPA at:

U.S. Environmental Protection Agency
National Center for Environmental Research and Quality Assurance (8703)
401 M Street SW
Washington DC 20460
Phone: (202) 260-3837
Fax: (202) 260-2039 Email: ord.grants@epamail.epa.gov

Each application must contain the following:

A. Application for Federal Assistance (Standard Forms 424 and 424A). These forms must have original signature.

B. A detailed, itemized budget for each year of the proposed project.

C. A budget justification describing the basis for calculating the personnel, fringe benefits, travel, equipment, supplies, contractual support, and other costs identified in the itemized budget.

D. An abstract containing the following information: The project title, the names and affiliations of all investigators, and a summary of the objectives, expected results, and approach described in the proposal. The abstract must not exceed one (1) 8.5 x 11 inch page of single-spaced standard 12 point type with 1 inch margins.

E. A Description of the Project. For proposals submitted to all areas other than topic 7, Environmental Statistics, this description must not exceed fifteen (15) pages; for proposals submitted to topic 7, Environmental Statistics, the description must not exceed twenty (20) pages. All pages must be consecutively numbered, 8.5 x 11 inch, single-spaced standard 12 point type with 1 inch margins. The description must provide the following information (1-5):

   1. Objectives: List objectives of the proposed research and/or the hypotheses being tested during the project.

   2. Expected Results or Benefits: Describe the results you expect to achieve during the project and the benefits of success.

   3. Approach: Outline the methods, approaches, and techniques that you intend to employ in meeting the objective stated above.

   4. General Project Information: Discuss other information relevant to the potential success of the project. This might include facilities, project schedules, proposed management, interactions with other institutions, etc.

   5. Quality Assurance: A brief narrative statement (not to exceed two consecutively numbered, 8.5 x 11 inch pages of single-spaced standard 12 point type with 1 inch margins) describing the quality assurance procedures proposed for the project (see section of this RFA on quality assurance).

F. Any important attachments, appendices, references, or other information may be included but must not exceed five (5) pages.

G. The resumes of the principal investigator, and co-workers. Resumes must not exceed two consecutively-numbered, 8.5 x 11 inch pages of single spaced standard 12 point type with 1 inch margins.

H. Standard Form (SF) 5700-48 Procurement System Certification (provided in Application Kit).

I. Standard Form (SF) 5700-49 Debarment and Suspension Certification (provided in Application Kit).

J. A list of key contacts (provided in Application Kit) including authorizing representative, payee, administrative contact, and project manager.

K. Disclosure of Lobbying Activities (provided in Application Kit).

L. Copy of State Clearing House Approval Notification (see Application Kit to determine if applicable).

M. In lieu of the Application Receipt Letter provided in the Application Kit, the applicant **must** include a blank self-addressed, stamped post card with the application.

The application must contain all of the above, in the order listed.

## Sorting Codes

In order to facilitate proper assignment and review of applications, applicants are asked to identify the topic area in which their application is to be considered. Applications must be identified by printing the appropriate Sorting Code (see below) in block 10 of the SF-424.

| | |
|---|---|
| Ecological Assessment | |
| Protection and Restoration | 96-NCERQA-1A |
| Global Climate Change | 96-NCERQA-1B |
| Exposure of Children to Pesticides | 96-NCERQA-2 |
| Air Quality | |
| Tropospheric Ozone | 96-NCERQA-3A1 |
| Air Toxics | 96-NCERQA-3A2 |
| Indoor Air Quality | 96-NCERQA-3B |
| Analytical & Monitoring Methods | |
| Field Analytical Methods | 96-NCERQA-4A |
| Continuous Measurement Methods | 96-NCERQA-4B |
| Leachability Prediction | 96-NCERQA-4C |
| Drinking Water | |
| Microbial Pathogens | 96-NCERQA-5A |
| Disinfection By-Products | 96-NCERQA-5B |
| Fate and Treatment of Toxics and Hazardous Wastes | |
| Fate and Mobility | 96-NCERQA-6A |
| Assessment of Risks | 96-NCERQA-6B |
| Environmental Statistics | 96-NCERQA-7 |
| High Performance Computing | |
| Problem Solving Environments | 96-NCERQA-8A |
| Parallel Algorithms | 96-NCERQA-8B |
| Data Access and Analysis Tech | 96-NCERQA-8C |
| General Solicitation | |
| Exploratory Research Grants | 96-NCERQA-9A |
| Early Career Research Awards | 96-NCERQA-9B |

The Sorting Code must be placed in Block 10 of SF 424 as shown below:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 10 | CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: | 0 | 0 | • | 5 | 0 | 0 |
| TITLE: | 96-NCERQA-X | | | | | | |

The Sorting Code must also be included in the address on the package that is submitted to EPA (see next section on how to apply).

## How to Apply

To be considered, the original and ten (10) copies of the fully developed research grant application and five (5) additional copies of the abstract (fifteen in all), must be received (post-marked if sent by U.S. Mail) by the National Center for Environmental Research and Quality Assurance no later than **4:00 P.M. EST** on the closing date assigned to the topic area appropriate to the application (see sorting codes). The closing dates for the topic areas are:

| | |
|---|---|
| Ecological Assessment | Feb 29, 1996 |
| Exposure of Children to Pesticides | Feb 15, 1996 |
| Air Quality | |
| Tropospheric Ozone | Feb 29, 1996 |
| Air Toxics | Feb 29, 1996 |
| Indoor Air | Feb 29, 1996 |
| Analytical & Monitoring Methods | Feb 15, 1996 |
| Drinking Water | |
| Microbial Pathogens | Feb 15, 1996 |
| Disinfection By-Products | Feb 15, 1996 |
| Fate and Treatment of Toxics and Hazardous Wastes | Feb 15, 1996 |
| Environmental Statistics | Feb 29, 1996 |
| High Performance Computing | Feb 29, 1996 |
| General Solicitation | Feb 29, 1996 |

The application and abstracts must be prepared in accordance with instructions in the Application Kit for Federal Assistance and this RFA. Informal, incomplete, or unsigned proposals will not be considered. Completed applications should be sent via regular or express mail to:

U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research and Quality Assurance (8703)
Sorting Code: 96-NCERQA-X
Room M2426
401 M Street SW
Washington DC 20460

Applications sent via express mail should have the following telephone number listed on the express mail label: (202) 260-3837

## Quality Assurance

Data sets resulting from EPA-funded environmental research often are used by government officials when establishing standards or when making other policy decisions.

Explicit indicators of data quality are essential for determining whether a particular data set is appropriate for use in a specific context. To that end, EPA regulations require that grant-funded projects address quality assurance.

The application must include a quality assurance narrative statement, not to exceed two pages, which for each item listed below, either presents the required information or provides justification as to why the item does not apply to the proposed research.

- The intended use of the data and the associated acceptance criteria for data quality (i.e., precision, accuracy, representativeness, completeness, and comparability).
- Project requirements for precision, accuracy, representativeness, completeness, and comparability, and how these will be determined.
- Procedures for selection of samples or sampling sites, and collection or preparation of samples.
- Procedures for sample handling, identification, preservation, transportation, and storage.
- Description of measurement methods or test procedures, with a statement of performance characteristics if methods are non-standard.
- Standard quality assurance/quality control procedures (e.g., American Society for Testing Materials, American Public Health Association, etc.) to be followed. Non-standard procedures must be documented.
- Data reduction and reporting procedures, including description of statistical analyses to be used.

## Guidelines and Limitations

Subcontracts for research to be conducted under the grant that exceed 40% of the total direct cost of the grant for each year in which the subcontract is awarded will be subject to special review.

## Additional Requirements

Researchers will be expected to participate in an annual All-Investigator Meeting with EPA researchers and other grantees and cooperators to report on research activities and to discuss issues of mutual interest.

## Eligibility

Academic and not-for-profit institutions located in the U.S., and state or local governments are eligible under all existing authorizations. Profit-making firms are eligible only under certain laws, and then under restrictive conditions, including the absence of any profit from the project. Federal agencies and federal employees are not eligible to participate in this program. Potential applicants who are uncertain of their eligibility should contact EPA's Grants Operations Branch at (202) 260-9266.

## Review and Selection

All grant applications are initially reviewed by EPA to determine their legal and administrative acceptability and responsiveness to this solicitation. Acceptable applications are then reviewed by an appropriate technical peer review group. This review is designed to evaluate and rank each proposal according to its scientific merit. Each review group is composed primarily of non-EPA scientists, engineers, social scientists, and/or economists who are experts in their respective disciplines. All reviewers are proficient in the technical areas that they are reviewing. The reviewers use the following criteria in their reviews:

- quality of the research plan (including theoretical and/or experimental design, originality, and creativity);
- qualifications of the principal investigator and staff, including knowledge of relevant subject areas;
- potential contribution of the research to advancing scientific knowledge in the environmental area;
- availability and adequacy of facilities and equipment; and
- budget justification -- justification for equipment will receive special attention;
- responsiveness to solicitation objectives.

Funding decisions are the sole responsibility of EPA. Grants are selected on the basis of technical merit, relevancy to the research priorities outlined, program balance, and budget.

EPA anticipates making awards from this RFA by September 1996.

## Proprietary Information

By submitting an application in response to this solicitation, the applicant grants EPA permission to share the application with technical reviewers both within and outside of the Agency. Applications containing proprietary or other types of confidential information will be immediately returned to the applicant without review.

## Funding Mechanism

The funding mechanism for all awards issued under this solicitation will consist of either a grant or cooperative agreement between EPA and the recipient.

In accordance with Public Law 95-224, a grant or cooperative agreement is used to accomplish a public purpose of support or stimulation authorized by Federal statute rather than acquisition for the direct benefit of the Agency. In using a grant instrument, EPA anticipates that there will be no substantial involvement during the course of the grant between the recipient and the Agency. When substantial involvement is anticipated, a cooperative agreement will be awarded.

## Contacts

Additional general information on the grants program may be obtained by contacting:

U.S. Environmental Protection Agency
National Center for Environmental Research and Quality Assurance (8703)
401 M Street SW
Washington DC 20460
Phone: (202) 260-3837
Fax: (202) 260-2039 Email: ord.grants@epamail.epa.gov

Applicants with technical questions may contact the appropriate individual identified below.

## Contacts for Research Topics of Interest

*Ecological Assessment*

- Robert Menzer 202-260-5779
  menzer.robert@epamail.epa.gov
- Barbara Levinson 202-260-5983
  levinson.barbara@epamail.epa.gov

*Exposure of Children to Pesticides*

- Chris Saint 202-260-1093
  saint.chris@epamail.epa.gov

*Air Quality*

- Deran Pashayan 202-260-2606
  pashayan.deran@epamail.epa.gov

*Analytical and Monitoring Methods*

- David Friedman 202-260-3535
  friedman.david@epamail.epa.gov

*Drinking Water*

- Sheila Rosenthal 202-260-7334
  rosenthal.sheila@epamail.epa.gov

*Environmental Fate and Treatment of Toxics and Hazardous Wastes*

- William Stelz 202-260-5798
  stelz.william@epamail.epa.gov

*Environmental Statistics*

- Chris Saint 202-260-1093
  saint.chris@epamail.epa.gov

*High Performance Computing*

- Chris Saint 202-260-1093
  saint.chris@epamail.epa.gov

*Exploratory Research*

- Clyde Bishop 202-260-5727
  bishop.clyde@epamail.epa.gov

# NSF/EPA PARTNERSHIP FOR ENVIRONMENTAL RESEARCH

## 1.0 INTRODUCTION

The National Science Foundation (NSF) and the Environmental Protection Agency (EPA) announce their intent to support a special awards competition in Fiscal Year (FY) 1996. This NSF-EPA competition has been developed based on a Memorandum of Understanding signed on December 8, 1994 which establishes a partnership between the two agencies emphasizing the support and merit review of fundamental, extramural environmental research. As EPA's Office of Research and Development expands its extramural grants program in FY 1996, NSF is providing assistance and consultation. This is the second year of the joint special awards competition. Information on the FY 1995 competition may be found on the Internet through: http://www.nsf.gov/stratare/egch/envresop.htm. The three research areas targeted by this Announcement of Opportunity are:

A. Water and Watersheds
B. Technology for a Sustainable Environment
C. Decision Making and Valuation for Environmental Policy

Awards made through this competition are dependent upon responsiveness of the proposals to the announcement, the quality of the proposed research, and the availability of funds. Under this announcement, NSF and EPA anticipate awarding:

- Approximately $6 million for Water and Watersheds, with a projected award range from $75,000 to $500,000 per award per year, and an approximate duration of 2 to 3 years.

- Approximately $5 million for Technology for a Sustainable Environment, with a projected award range from $75,000 to $150,000 per award per year, and an approximate duration of 2 to 3 years.

- Approximately $2.5 million for Decision Making and Valuation for Environmental Policy, with a projected award range from $60,000 to $250,000 per award per year, and an approximate duration of 2 to 3 years.

Proposals in response to this announcement must be received by 7 May 1996. It is anticipated that awards will be made by Fall 1996. Awards resulting from this competition may be made by either NSF or EPA, at the agencies' option, not the grantee's.

Further information, if needed, may be obtained from the NSF and EPA officials indicated below. E-mail inquiries are the preferred communication method.

**GENERAL INFORMATION ON THE COMPETITION:**

Dr. James L. Edwards
NSF Directorate for Biological Sciences
jledward@nsf.gov
voice (703) 306-1400

Dr. Elbert L. Marsh
NSF Directorate for Engineering
emarsh@nsf.gov
voice (703) 306-1301

Mr. Jeff Fenstermacher
NSF Directorate for Social, Behavioral, and Economic Sciences
jfenster@nsf.gov
voice (703) 306-1741

Dr. Robert E. Menzer
EPA National Center for Environmental Research and Quality Assurance
menzer.robert@epamail.epa.gov
voice (202) 260-5779

Dr. Melinda L. McClanahan
EPA National Center for Environmental Research and Quality Assurance
mcclanahan.melinda@epamail.epa.gov
fax (202) 260-0450, voice (202) 260-7474

**Information on Water and Watersheds:**

Dr. Penny Firth
pfirth@nsf.gov
voice (703) 306-1480

Dr. Ian MacGregor
imacgreg@nsf.gov
voice (703) 306-1553

Ms. Barbara Levinson
levinson.barbara@epamail.epa.gov
fax (202) 260-0211, voice (202) 260-5983

**Information on Technology for a Sustainable Environment**

Dr. Robert Wellek
rwellek@nsf.gov
fax (703) 306-0319

Dr. Marge Cavanaugh
mcavanau@nsf.gov
voice (703) 306-1842

Mr. Stephen A. Lingle
lingle.stephen@epamail.epa.gov
voice (202) 260-5748

**Information on Decision Making and Valuation for Environmental Policy**

Dr. Robin Cantor
rcantor@nsf.gov
voice (703) 306-1757

Mr. Gregory C. Ondich
ondich.greg@epamail.epa.gov
fax (202) 260-4524, voice (202) 260-5753

Dr. Mary Jo Kealy
kealy.mary@epamail.epa.gov
fax (202) 260-5732, voice (202) 260-5728

Dr. Alan Carlin
carlin.alan@epamail.epa.gov
fax (202) 260-5732, voice (202) 260-5499

## 2.0 TOPIC A: WATER AND WATERSHEDS

### 2.1 INTRODUCTION

The goal of the Water and Watersheds competition is to develop an improved understanding of the natural and anthropogenic processes that govern the quantity, quality, and availability of water resources in natural and human-dominated systems, and an understanding of the structure, function, and dynamics of the coupled terrestrial and aquatic ecosystems that comprise watersheds.

Human activities have made access to clean water and healthy aquatic ecosystems paramount issues in the U.S. and throughout the world. The integrated nature of watersheds—the landscape units that integrate terrestrial, aquatic, geologic, and atmospheric processes—provides a strong rationale for supporting interdisciplinary science and engineering research that uses a systems approach[1]. Such research is needed for decisionmaking that balances restoration, long-term protection, and informed management of water and watersheds with socioeconomic considerations.

As we assess the relative risks faced by the nation's aquatic resources, and evaluate the natural capital represented in water and watersheds, we need a better knowledge base regarding how humans and their infrastructure interact with water and watersheds. Information on water and watersheds should be assessed and integrated with the needs of management and policy decisionmakers as a base for identifying areas where improved understanding is needed and for developing the multifaceted and interactive models needed for research and management of entire watersheds.

### 2.2 DESCRIPTION

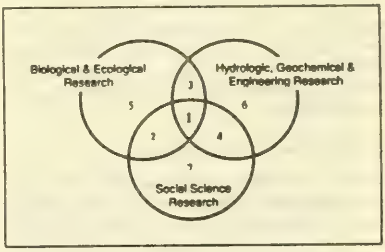
This competition emphasizes multidisciplinary, fundamental research on important scientific, engineering, and socioeconomic principles for understanding, protecting, and restoring water resources and watershed processes in the U.S. and other regions of the world. A systems approach and general applicability of the research to watershed-scale questions are required in each proposal. Investigators are encouraged to bring together formerly disparate, state-of-the-art approaches to address watershed-scale issues and explore new paradigms that draw widely from different disciplines.

Three overarching research components related to water and watersheds provide the framework for this competition. The degree to which these three components are integrated in a systems approach will be a review criterion. The most competitive proposals will be those that help integrate multiple goals of NSF and/or EPA programs and address questions that are comprehensive in scale and transferable in scope. Appropriate and innovative statistical methodologies and modeling are encouraged. Research that explores questions of spatial and temporal scaling is appropriate in the context of all components.

The three overarching components are:

- Ecological research that links diversity and vitality of aquatic biota and ecological processes, relationships among populations and communities of organisms, and land use or other anthropogenic factors.
- Hydrologic, biogeochemical, and engineering research that addresses the physical, chemical, and biological processes and mechanisms which govern the interactions of nutrients, metals, toxic materials, and organisms within and among surface waters, groundwaters, sediments, soils, and the atmosphere.
- Social science research that develops a systemic perspective on, and predictive understanding of, the impacts and spatial aspects of human behavior and social and economic systems on surface and ground water resources and watersheds.

The following diagram represents the intersections of these three research components, and illustrates the areas in which proposals are particularly sought. Statistical analyses, mathematical modeling, geographic information systems, and spatial and temporal scaling research cross all numbered areas.


Biological & Ecological Research
Hydrologic, Geochemical & Engineering Research
Social Science Research
1
2
3
4
5
6
7

Area 1 represents the intersection of **all three** research components. ***Proposals that fall in this area are most desirable.*** Examples of the kinds of studies to be encouraged include, but are not limited to: watershed management research that explores the interface between terrestrial and aquatic ecosystems as related to contaminant transport, availability of nutrients, and non-point source runoff and infiltration; research on the human, biological, and geochemical impacts of exotic species introductions and fragmentation of aquatic populations; research on socioeconomic incentives and disincentives as they relate to protection of water quality and diversity/vitality of aquatic biota and ecological processes; and research on restoration of hydrological and ecological functions that includes assessment of human disturbance, including geographic impacts, and system recovery.

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[1] For the purposes of this announcement, a systems approach is one that emphasizes the interactions among components of the system (human, environmental, technological) and considers the factors that could impact the system if any component were to change.

Areas 2, 3 and 4 in the diagram represent the intersections of paired areas as indicated. Proposals that fall in these areas are the next most desirable. Examples of the kinds of studies to be encouraged include, but are not limited to: research on microbial and other biological factors that affect the status and behavior of contaminants in sediments and wetlands; research that explores the relations among human behavior, resource and associated land use patterns, quality of drinking water sources, and aquatic populations and communities; research on the impacts of floods, droughts, urbanization, and wet weather flows on water quality and bioavailability of nutrients and contaminants; research on effects of changes in hydrologic regime and contaminant loading on risk perception and associated socioeconomic dynamics.

International opportunities for research are also available. The following types of activities are especially encouraged between U.S. and foreign scientists and engineers: 1) coperative research, 2) joint seminars and planning visits, and 3) international research experiences for scientists at an early stage in their careers.

Proposals on the following will *not* be considered in this competition: industrial accidents, spills, routine monitoring projects, routine application of well-established models, projects involving site-specific remediation practices, drinking water treatment and distribution, point-source waste-water treatment and sanitary sewerage infrastructure, and research on human health effects.

More focused disciplinary projects not employing an interdisciplinary, systems approach that fall into disciplinary areas marked 5, 6 and 7 **will not** be considered in this competition. Proposals seeking funds for such projects should be submitted to other existing programs.

### 2.3 ADDITIONAL CONSIDERATIONS

Proposers are requested to designate, in descending priority order, ***two or more*** of the following three research components emphasized in their proposed study. Please make this designation the first line of the Project Summary. These areas are described in Section 2.2 of this announcement.

- Biological and Ecological Research
- Hydrologic, Geochemical, and Engineering Research
- Social Science Research

The normal 15-page limit specified in the *Grant Proposal Guide* (GPG) (NSF 95-27) will be ***strictly*** enforced, with attention given to font size, margins, and other requirements. The 15 pages should be used for the project description, including figures and tables. The "Results from Prior Support" section, which under normal GPG guidelines is counted as part of the 15-page limit, should appear as a separate section up to 5 pages in length. Note: This deviation from the GPG is authorized for Water and Watersheds proposals *only*. The "Results from Prior Support" section should include information on prior Federal awards most closely related to the proposal, (i.e. not limited to NSF awards).

Please see Section 6.0 for complete instructions for proposal submission.

In addition to the general review criteria listed in the GPG (see Section 7.0 of this announcement), Water and Watersheds proposals will also be judged on the degree to which the three overarching research components described in Section 2.2 are integrated in a systems approach, and the likelihood that the proposed research will effectively address questions that are comprehensive in scale and transferable in scope. Attention will be given to the appropriateness of the proposed statistical and mathematical methodologies.

Proposals received by other NSF programs under normal unsolicited proposal mechanisms will **NOT** be considered in the FY 1996 Water and Watersheds competition.

Approximately $6 million will be made available for this competition, with a projected award range from $75,000 to $500,000 per award per year and an approximate duration of 2 to 3 years.

Final selection of Water and Watersheds awardees by NSF and EPA will be based on the evaluation of the relative merit of the proposals made by recommendations by *ad hoc* reviewers, additional review by a panel of peers, and programmatic considerations. It is expected that grant awards will be made by Fall, 1996. Appropriate officials may be contacted after 15 November 1996 regarding proposal status.

## 3.0 TOPIC B: TECHNOLOGY FOR A SUSTAINABLE ENVIRONMENT

### 3.1 INTRODUCTION

As a nation, we seek long-term economic growth that creates jobs while improving and sustaining the environment. It is increasingly clear that the "end-of-pipe" pollution controls are not a sufficient means of reaching these goals. A new generation of cleaner industrial manufacturing and processing technologies is needed that supports pollution prevention, efficient resource use, and industrial ecology. Such a strategy can help companies become more competitive by lowering resource and energy needs, reducing waste and emissions control costs, and fostering sustainable development.

This competition is designed to address pollution prevention processes, methodologies, and technology research. Research proposals are invited that advance the development and use of innovative technologies and approaches directed at avoiding or minimizing the generation of pollutants at the source. This competition is *not* intended to address issues related to waste monitoring, treatment, remediation, or containment other than those aspects that pertain to in-process recycling of waste. Research in the areas of remediation and treatment of hazardous materials, while very important, is supported by other program activities in both agencies.

NSF and EPA are providing funds for fundamental and applied research in the physical sciences and engineering that will lead to the discovery, development, and evaluation of advanced and novel environmentally benign methods for industrial processing and manufacturing. The competition addresses technological environmental issues of design, synthesis, processing, and the production and use of products in continuous and discrete manufacturing industries. Projects must employ fundamental new approaches, and address, or be relevant to, current national concerns for pollution prevention.

### 3.2 DESCRIPTIONS OF POSSIBLE RESEARCH PROJECTS

#### Chemistry for Pollution Prevention

The long-range goal of this program activity is to develop safer commercial substances and environmentally friendly chemical syntheses to reduce risks posed by existing practices. Pollution prevention has become the preferred strategy for reducing the risks posed by the manufacture, use, and disposal of commercial chemicals. A fundamental approach, a "green chemistry" approach, is to prevent pollution at its source, which includes:

- Design of alternative synthetic pathways for new or existing chemicals which do not utilize toxic reagents or solvents or do not produce toxic by-products or co-products.
- Design or redesign of useful chemicals and materials such that they are less toxic to health and the environment or safer with regard to accident potential.

Appropriate areas of investigation include: chemical synthesis and catalysis; analysis and detection; separation processes; and reaction mechanisms. Examples include:

- Use of innovative methods such as catalysis and biocatalysis; photochemistry or biomimetic synthesis; and use of alternative starting materials which are innocuous or renewable.
- Use of creative reaction conditions, such as using solvents which have a reduced impact on health and the environment or increasing reaction selectivity thus reducing wastes and emissions.

#### Engineering for Pollution Prevention.

The focus of this program activity is to develop novel engineering approaches for preventing or reducing pollution from industrial manufacturing activities, both for continuous and discrete processes. The scope includes: equipment and technology modifications, reformulation or redesign of products, substitution of alternative materials, and in-process changes. Although these methods are often thought of in relation to the chemical, biochemical, and materials process industries, they can be utilized in many other industries—such as semiconductor manufacturing systems. Potential areas of research include:

- Novel, cost-effective methods for the highly efficient in-process separation of useful materials from the components of the process waste stream, for example, field-enhanced and hybrid separation processes.
- Materials substitutions and process alternatives which prevent or reduce environmental harm, such as change of raw material or the use of less hazardous solvents, organic coatings, and metal plating systems.
- New bulk materials and coatings with durability, long life, and other desirable engineering properties that can be manufactured with reduced environmental impact.
- Improved reactor, catalyst, or process design in order to increase product yield. Approaches might include novel reactors such as reactor-separation combinations that provide for product separation during the reaction, alternative energy sources for reaction initiation, and integrated process design and operation.
- Development of environmental technologies that use physical processes to alter biologically refractory pollutants—both known and potential—into forms that are amenable to biodegradation.
- New or improved manufacturing processes that reduce production of hazardous effluents at the source. Examples include: machining without the use of cutting fluids that currently require disposal after they are contaminated; eliminating toxic electroplating solutions by replacing them with ion or plasma-based dry plating techniques.
- Improved manufacturing processes that employ novel thermal or fluid and/or multiphase/particulate systems resulting in significantly lower hazardous effluent production. Examples include: novel refrigeration cycles using safe and environmentally-benign working fluids to replace halogenated hydrocarbons hazardous to upper atmosphere ozone levels; improved automobile combustion process design for reduced pollutant production.
- Optimization of process manufacturing operations to prevent, reduce, or eliminate waste. Concepts include: increased in-process or in-plant recycling and improved and intelligent process control and sensing capabilities; in-process techniques that minimize generation of pollutants in industrial waste incineration processes.

#### Measurement, Assessment, and Feedback Techniques for Pollution Prevention.

This competition also encourages research in physical sciences and engineering that will lead to the development of novel measurement and assessment techniques for pollution prevention. Topics in this program activity include life cycle analysis, computational simulations, and process design algorithms for product life cycle analysis, as well as the development of appropriate measurement methods to use as input for such analyses. The methods developed should provide the basis for scientifically sound and quantitative comparisons of the environmental impact of various technologies. The following examples provide some areas of investigation:

- Innovative, full scale, quantitative methodologies for conducting life cycle analysis which permit sound quantitative comparisons of impacts of different pollutants on different media.
- Streamlined, targeted life cycle analysis and environmental product design methodologies and systems that can provide scientifically sound comparisons with less comprehensive data inputs and computational analysis.
- Algorithms incorporating pollution prevention into process design, intelligent control, and simulation methodologies for process and manufacturing design.
- Process simulator modules for new technologies such as novel membrane processes.
- Improved and intelligent sensors and control algorithms for real time, in-process multivariate control of manufacturing equipment and systems to reduce waste material and hazardous emissions.

### 3.3 RELATION TO CURRENT AND PAST AGENCY ACTIVITIES

The NSF/EPA Technology for a Sustainable Environment activity is an integral part of EPA's research program and supports the Green Chemistry, Common Sense Initiative, and other pollution prevention activities in the Agency. For NSF, this activity is an integral part of its Environmentally Benign Chemical Synthesis and Processing program and its Environmentally Conscious Manufacturing program as described below.

**Environmental Protection Agency**

Green Chemistry Program: This program is directed at preventing pollution by promoting design of less toxic chemical substances and identifying alternative chemical pathways that involve less toxic reagents or solvents and generate fewer toxicity-products or co-products. As part of this program, EPA has initiated the Green Chemistry Challenge. The Challenge includes an awards component to recognize those in industry and academia who have met the Green Chemistry objectives in an exemplary way, and a research component to enhance support for cutting edge research in this area.

Common Sense Initiative: EPA's Common Sense Initiative is directed toward finding better, cheaper, and faster ways of achieving environmental improvement through a stakeholder-based dialogue in six specific industrial sectors: metal finishing, printing, iron and steel, electronics, automobile assembly , and petroleum refining.

**National Science Foundation**

Environmentally Benign Chemical Synthesis and Processing (EBCS&P): This program, described in NSF 92-13, is aimed at preventing pollution by providing financial support for fundamental research in the identification of environmentally benign synthesis and related manufacturing processes. For the NSF Engineering Directorate's Chemical and Transport Systems Division, the Technology for a Sustainable Environment activity subsumes the EBCS&P activity in Fiscal Year 1996. For the NSF Directorate of Mathematics and Physical Science's Division of Chemistry, research proposals are also accepted for EBCS&P activities throughout the year as part of its normal review process, as well as through this special NSF/EPA activity.

Environmentally Conscious Manufacturing (ECM): This competition addresses specific aspects of the Environmentally Conscious Manufacturing Initiative Announcement, NSF 95-91. Therefore in Fiscal Year 1996, the ECM activity is largely subsumed in this announcement. However, only those areas described in this solicitation will be considered: proposals in all other ECM topic areas may be submitted under the normal procedures for unsolicited NSF proposals to the relevant divisions. Copies of NSF 95-91 announcement are available upon request and can also be obtained via STIS and the World Wide Web.

### 3.4 ADDITIONAL CONSIDERATIONS

A clearer understanding of problems and more creative solutions often result from collaboration of academic and industrial investigators who represent the eventual customers for the products of the research. Therefore, applicants are encouraged to seek meaningful project collaboration with industrial partners on fundamental research issues that link basic and applied aspects of pollution prevention. In some cases, state government agencies, or other professional organizations may be an appropriate substitute for an industrial partner. The NSF Grant Opportunities for Academic Liaison with Industry (GOALI) program announcement (NSF 94-138) outlines several possible approaches. Additional approaches will also be considered.

Proposals may be submitted by individuals or small groups who are working on projects that will advance the concepts and technologies of pollution prevention. Researchers in a broad range of disciplines are encouraged to help fill the knowledge gaps in this area both individually and as interdisciplinary teams.

Researchers from both academic and non-profit institutions may apply for support (see Section 5.0). Projects involving the training and education of junior scientists and engineers (such as graduate students) in academia through the research experience are strongly encouraged.

Approximately $5 million will be available for the Technology for a Sustainable Environment competition, with a projected award range from $75,000 to $150,000 per award year, and a duration of up to 3 years. Multi-investigator projects may be considered for a higher funding level. Multi-year funding of any project will be considered. Respondents wishing to propose projects for more than one year should include annual budgets and should justify this need. Proposals that include resource contributions (cost sharing) from submitters and/or their partners will receive special consideration.

In the present competition, reviewers will consider the potential impact of the research on pollution prevention, in addition to NSF's standard review criteria described in Section 7.0 of this announcement.

Please see Section 6.0 for complete instructions for proposal submission.

Proposals received by NSF under its normal unsolicited proposal mechanisms may also be deemed appropriate for consideration by the Technology for a Sustainable Environment competition, and may be funded under this joint program.

The total number of awards for this activity is dependent upon the technical merit of the proposals, their relation to the agencies' mission, and the financial support available to both agencies for this program. Projects selected for support may receive funds either individually from NSF or EPA, or selected projects may be jointly supported by both agencies. This is at the agencies' option, not the grantee's.

## 4.0 TOPIC C: DECISION MAKING AND VALUATION FOR ENVIRONMENTAL POLICY

### 4.1 INTRODUCTION

The Decision Making and Valuation for Environmental Policy competition encourages research on decision making and understanding public values in environmental policy and related public issues. Within this component, priority will be given to fundamental and methodological research on benefit-cost analysis, ecosystem valuation, and normative behaviors and environmental decision making. The goal of this competition is to support research that advances the scientific basis of valuation and decision analysis as it contributes to the formulation and evaluation of environmental policy. Funding priority will be given to research that assists environmental agencies at all levels of government to address issues of practical significance to their activities.

Theoretical and empirical research in mathematics, engineering, social and behavioral sciences, and environmental ethics have provided a number of useful analytical frameworks for organizing information on the economic and social consequences of alternative environmental policies. Benefit-cost analysis, multi-criteria decision analysis, cost-effectiveness analysis, and consensus modeling represent well known approaches in environmental decision making. At the federal level and to a more limited extent at the state level, benefit-cost analysis is required for all major regulations as well as legislative initiatives and some other decisions. A general lack of accepted methods for determining many important economic and social benefits and costs limits the use of decision-analytic frameworks, particularly for problems that involve ecosystems. This competition invites applications that address key theoretical and methodological needs associated with the use of these frameworks. Novel, collaborative, or interdisciplinary scientific efforts are especially encouraged.

### 4.2 DESCRIPTION

Government agencies responsible for policy analysis, statutory rules, regulatory decision making, priority setting for environmental actions, and assessment have an interest in advancing research to help develop practical approaches to estimating economic and social benefits and costs that are systematic and credible. This competition is intended to support research projects in four areas: (1) benefits of environmental policies and programs; (2) costs of environmental policies and programs; (3) ecosystem valuation and protection; and (4) normative behaviors and environmental decision making.

#### Benefits of Environmental Policies and Programs

Environmental policies and programs are generally intended to protect or improve the health and well being of humans and the ecosystems vital to human welfare. Policies that enhance and protect the environment provide economic value and benefits to society. Currently, there are several approaches to measuring this value, including methods that rely predominantly upon either revealed or stated preferences for health and environmental goods and services. Improvements to existing methods and the development of new methods are encouraged.

Examples of areas where government agencies have significant information needs in the environmental valuation area include:

- Methods to improve estimation of values for reductions in mortality and morbidity risks resulting from pollution and other environmental hazards. Research on methods to address non-cancer health benefits is particularly encouraged.
- Identification and improvement of methods for measuring environmental quality influences on human welfare, including those that recognize distributional factors in addition to efficiency.
- Methods to apply existing benefit estimates or valuation functions to assess the benefits of a distinct, but similar environmental change (i.e., benefits transfer methods).
- Improved methods for valuing changes in the environmental quality of public resources (e.g., groundwater) regulated by multiple laws.
- Methods to assess the benefits of providing environmental information to consumers,

investors, and/or producers of goods and services.

### Costs of Environmental Policies and Programs

The societal costs of environmental policies and programs include compliance costs, government regulatory costs, losses to consumer and producer welfare, costs of displaced resources, and other costs to the economic system arising from changes in product quality, productivity, innovation, and market structure. Industry, however, increasingly abates pollution by changes in production processes (i.e., pollution prevention) instead of waste remediation. As a consequence, traditional financial and engineering methods must be augmented by dynamic models that incorporate resource substitutions, price changes, technological change, and innovation. This component of the competition seeks to strengthen the conceptual and empirical basis for cost estimation methods. Examples of topics of interest in this area are:

- Integrated approaches to modeling production technology that includes both desirable outputs and potential wastes or pollutants, including conceptual and methodological research that captures life-cycle or legacy factors.
- Methodology to estimate the cost savings from using economic incentives relative to other approaches to environmental pollution control.
- Empirical research that compares estimated and realized costs for pollution prevention and abatement at levels of the plant, market, industry, and economy.
- Improved methods to estimate and validate aggregate and sectoral costs of environmental protection programs including, for example, empirical analyses of system-wide and dynamic effects that capture plant location, productivity, and technological change.

### Ecosystem Valuation and Protection

Traditional valuation approaches have focused on changes in the individual services or functions of ecosystems to identify benefits or costs of environmental policy or regulation. Comprehensive assessments of changes in ecosystem functions are often limited by inadequate knowledge of the relationships among ecosystem inhabitants, functions, and services. Another limiting factor is the poorly understood relationship between keystone species or critical biological functions and human activities. Scientific advances in ecosystem valuation and cost analysis require better understanding of the interconnectedness among social, economic, physical, and biological systems. Proposals submitted to this component of the competition should emphasize these interdependencies in their research and focus on how comprehensive or critical ecosystem changes can be measured in terms of social welfare. Examples of the topics of interest in this component include:

- Core concepts of comprehensive ecosystem function, including research that characterizes and quantifies the natural environment and links measures of ecosystem productivity and sustainability with economic activities and changes in human welfare. Improved understanding of the economic-ecological relationships in areas such as wetlands, timber, watersheds, minerals, wildlife/fish, and grasslands are of particular interest.
- Methods for valuing biodiversity, populations of native species, amounts of protected areas and open space, and other critical ecosystem attributes, including research that illuminates the interactive and synergistic role of these attributes and their economic and social implications.
- Methods for defining the scope of ecosystem restoration that reflect the cost to restore the quality and service characteristics.
- Methods for valuation, including research that identifies ecosystem functions of value to society and addresses issues of time, scale, and natural and political boundaries.

### Normative Behaviors and Environmental Decision Making

This research opportunity area encourages research to identify and examine behavioral and institutional factors that influence the development, implementation, and evaluation of environmental policies. Research is expected to be theoretically and methodologically sophisticated and to contain an empirical component. Psychological attitudes, socio-cultural, legal, and ethical norms, economic forces, and political and communication activities, in isolation and altogether, affect the development and use of environmental policy. Better understanding of these factors, and the ways in which they can improve or interfere with social negotiations about environmental issues is needed. Potential topics for consideration here include, but are not limited to:

- Identification and characterization of communities and the values and normative behaviors that influence their responses to new environmental information, proposed development plans and regulations, and of processes to involve communities in developing and assessing criteria for decision making about environmental and economic investments and problems.
- Identification and analysis of social, political, and ethical factors relevant to environmental problem-solving in a trans-jurisdictional context, and effective mechanisms for addressing those factors.
- Implications of geographical and political boundaries and personal, group, and organizational characteristics, behaviors, and attitudes for environmental problem solving.
- Comparative analysis of different models of environmental decision making that emphasizes their descriptive, predictive, and prescriptive implications.

### 4.3 ADDITIONAL CONSIDERATIONS

To assist in the evaluation of how the research contributes to the decision needs of environmental agencies, proposals must include a special information and supplementary documentation section (Proposal Section I) titled "Policy Relevance." Section I is described in detail on page 10 of the GPG, and is not counted in the 15-page

Project Description limitation. For the purposes of this solicitation, the Policy Relevance discussion is limited to two pages and must contain an explicit statement on the policy relevance of the proposed research. In particular, the principal investigator (PI) must identify the "target group," or set of policy makers and/or policy analysts who are likely to benefit from this research. Once identified, the PI must elaborate on the potential benefits of this research for the designated target group. The PI should also address ways that members of the research team intend to communicate the results to the relevant target group

In addition, if the project will produce data and information of value to the broader research community, Section I also must include a discussion of "data and information availability." This discussion, not to exceed two additional pages, should describe the data and information products, the management plans for their validation, quality control and archiving, costs for these activities, and whether and under what conditions the data will be made available to interested parties.

The GPG normally limits the number of pages for the Project Description to fifteen. However, for this announcement, any proposal submitted under the Decision Making and Valuation for Environmental Policy component which involves a survey is hereby authorized to deviate from the requirement that all information be contained in Sections A through I of the proposal: proposers should append the survey instrument as an appendix to their proposal (see GPG, Section C.11., Appendices -- Proposal Section J).

Please see Section 6.0 for complete instructions for proposal submission.

Proposals received by NSF under its normal unsolicited proposal mechanisms may also be deemed appropriate for consideration by the Decision Making and Valuation for Environmental Policy competition, and may be funded under this joint program.

Approximately $2.5 million is expected to be available for this competition. The projected award range is $60,000 to $250,000 per award per year, with a duration of up to 3 years. Laboratory and field experiments and survey research, and multi-investigator projects may be considered for a higher funding level. Depending on the quality of proposals and the recommendations from merit review, the sponsoring agencies expect more than half the resources to be allocated to the component area of benefits of environmental policies and programs.

## 5.0 ELIGIBILITY

Proposals submitted in response to this solicitation will be accepted from colleges, universities, and other not-for-profit institutions in the U.S. Organizations affiliated with local, state, or federal government units (including FFRDCs) are not considered eligible. Personnel associated with entities such as national labs, state agencies, and FFRDCs are encouraged to participate as co-investigators on proposals originating at eligible institutions, within the limits imposed by applicable legislation and regulations. Federal employees may not receive salaries or in other ways augment their agency's appropriations through grants made by this program.

NSF and EPA welcome proposals on behalf of all qualified scientists, engineers, and other professionals, and strongly encourage women, minorities, and persons with disabilities to compete fully in any of the programs described in this announcement.

In accordance with Federal statutes and regulations and NSF and EPA policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from the National Science Foundation or the Environmental Protection Agency.

## 6.0 INSTRUCTIONS FOR PROPOSAL SUBMISSION

Proposals submitted in response to this Announcement *must* be prepared and submitted in accordance with the guidelines provided in the *NSF Grant Proposal Guide* (GPG) (NSF 95-27) with the exceptions and additional considerations noted in the topic-specific sections above (sections 2.3, 3.4 and 4.3). The GPG may be found in most university offices of sponsored research or may be obtained electronically via the Science and Technology Information System (STIS). Instructions for obtaining documents through STIS are printed on the inside front cover of this announcement.

Single copies of the GPG brochure and other NSF publications referenced in this announcement are available at no cost from: NSF Publications and Supplies Unit, 4201 Wilson Boulevard, Room P-15, Arlington, VA 22230, (703) 306-1130, or via e-mail from: pubs@nsf.gov. EPA documents referenced in this announcement are available through the Government Printing Office (S/N 055-000-00466-8), or electronically through the EPA-sponsored CLU-IN Clean-up Information Bulletin Board, system operator (301) 589-8368, modem access (301) 589-8366.

PLEASE NOTE:
For purposes of administration of the competition, applicants are requested to indicate one of the three topics (A, B, or C) in the box in the upper left corner of the cover page printed at the end of this announcement. If the cover page provided in the GPG is used instead, please write in one of these three topic areas in the box labeled: "FOR CONSIDERATION BY NSF ORGANIZATIONAL UNIT(S)."

A. Water and Watersheds
B. Technology for a Sustainable Environment
C. Decision Making and Valuation for Environmental Policy

Collaborative proposals involving more than one institution should be submitted as a single administrative package from one of the institutions involved. The package should include one project summary, one table of contents, one results from prior support, one project description, one section for references, and one copy of special information as specified in GPG section II.D.10. Additionally, the package should include, for each university and its PI/co-PIs, a signed cover sheet, budget pages and explanation, biographic sketches, current and pending support for each PI, and facilities and other resources unique to each institution. Group proposals, as described in GPG section II.D.12.b, will ***not*** be accepted for the three component competitions described in this announcement.

The "Results from Prior Support" section should include information on prior **Federal** awards most closely related to the proposal, (i.e. not limited to NSF awards). The information requested in GPG Section II.D.4 should be supplied for the most relevant federal awards received in the past five years. Please note the authorized exception to the GPG for Water and Watersheds proposals detailed in Section 2.3 of this announcement.

Twenty stapled copies of each proposal package, including one copy bearing original signatures from all institutions, should be mailed to:

Announcement No. NSF 96-45
National Science Foundation
Room P-60 - PPU
4201 Wilson Blvd.
Arlington, VA 22230

The closing date for proposal submission for this competition is ***7 May 1996***. Proposals submitted in response to this announcement must be:

1) received at the address given above no later than 7 May 1996; or,
2) be postmarked by the U.S. Postal Service no later than 2 May 1996.

NOTE: The 7 May 1996 deadline is final. Proposals received after 7 May, or postmarked later than 2 May 1996 **will not be accepted**.

For those proposals selected for funding by EPA, supplemental information will be needed to fulfill EPA regulatory requirements that differ from those of NSF. EPA will provide the applicant institution with the requisite forms at the appropriate time.

## 7.0 PROPOSAL REVIEW

EPA and NSF use similar general criteria in review of competitive grant proposals. NSF's criteria are described in the NSF *Grant Proposal Guide* (NSF 95-27). For this joint NSF-EPA announcement, proposals will be evaluated through the standard NSF merit review process, as conducted jointly by NSF and EPA. Compliance with Federal certification requirements is a prerequisite for receiving awards under this program.

General criteria used in the evaluation of proposals are:

- Overall merit of the proposal, including unique and innovative methods, approaches, or concepts demonstrated in the proposal.
- The qualifications and capabilities of the investigators.
- Potential to contribute to the advancement of the specific topic areas of the program in particular.
- Potential to enhance training and information transfer in the topic areas of this program.

Additional considerations important to the proposal review process are described in the topic-specific sections of this announcement (see Sections 2.3, 3.4 and 4.3).

Final selection of awardees by NSF and EPA will be based on recommendations by peer reviewers and programmatic considerations. It is expected that grant awards will be made by Fall 1996. Appropriate officials may be contacted after 15 November 1996 regarding proposal status.

## 8.0 GRANT ADMINISTRATION

Upon conclusion of panel merit review, meritorious proposals may be recommended for funding by either NSF or EPA, at the agencies' option, not the proposer's. Subsequent grant administration procedures will be in accordance with the individual policies of the awarding agency.

### 8.1 NSF GRANT ADMINISTRATION

NSF grants awarded as a result of this announcement will be administered in accordance with the terms and conditions of NSF GC-1, "Grant General Conditions," or FDP-II, "Federal Demonstration Project General Terms and Conditions," depending on the grantee organization.

For NSF awards, more comprehensive information on the administration of NSF grants is contained in the *Grant Policy Manual* (NSF 95-26, July 1995), for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, D.C. 20402. The telephone number at GPO is (202) 512-1800 for subscription information.

Organizations applying to NSF for the first time, or which have not received an NSF award within the preceding 2 years, should refer to the NSF Grant Policy Manual, Section 500, for instructions on specific information that may be requested by NSF. First time NSF awardees will be required to submit organizational, management, and financial information, including a certification of civil rights compliance, before a grant can be made. One copy of the Grant Policy Manual will be provided free of charge to new grantees.

Upon completion of an NSF project, a Final Project Report (NSF Form 98A) form will be sent to the grantee. Applicants should review this form prior to proposal submission so that appropriate tracking mechanisms are included in the proposal plan to ensure that complete information will be available at the conclusion of the project.

Activities described in this publication are in the following categories in the Catalog of Federal Domestic Assistance (CFDA):

- 47.041 Engineering;
- 47.049 Mathematical and Physical Sciences;
- 47.050 Geosciences;
- 47.074 Biological Sciences;
- 47.075 Social, Behavioral and Economic Sciences.

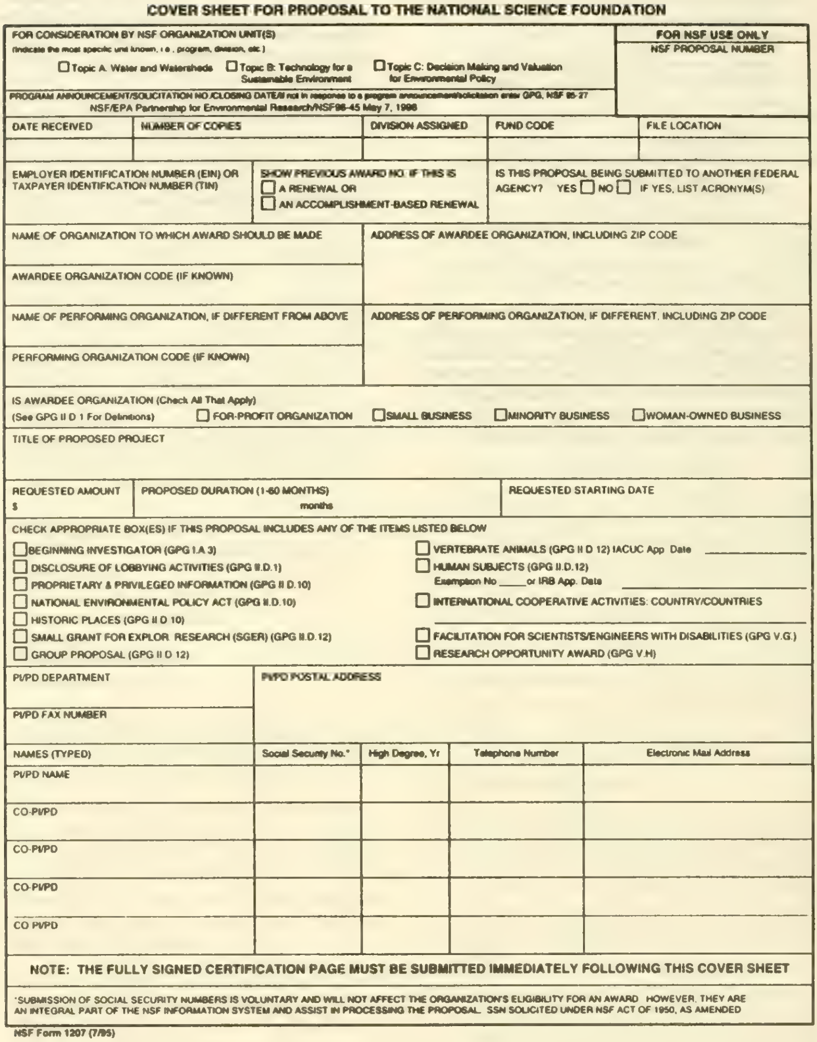
### 8.2 EPA GRANT ADMINISTRATION

The funding mechanism for all EPA awards made in response to this announcement will consist of a grant agreement between EPA and the recipient institution. In accordance with Public Law 95-224, a grant is used to accomplish a public purpose of support or stimulation authorized by Federal statute rather than acquisition for the direct benefit of the Agency.

EPA grants awarded as a result of this announcement will be administered in accordance with 40 CFR Part 30 and 40, or FDPII terms and conditions, depending upon the grantee institution.

EPA provides awards for research in the sciences and engineering related to environmental protection. The awardee is solely responsible for the conduct of such activities and preparation of results for publication. EPA, therefore, does not assume responsibility for such findings or their interpretation.

## APPENDIX A



### COVER SHEET FOR PROPOSAL TO THE NATIONAL SCIENCE FOUNDATION

FOR CONSIDERATION BY NSF ORGANIZATION UNIT(S)
(Indicate the most specific unit known, i.e., program, division, etc.)

☐ Topic A. Water and Watersheds ☐ Topic B: Technology for a Sustainable Environment ☐ Topic C: Decision Making and Valuation for Environmental Policy

PROGRAM ANNOUNCEMENT/SOLICITATION NO./CLOSING DATE/if not in response to a program announcement/solicitation enter GPG, NSF 95-27
NSF/EPA Partnership for Environmental Research/NSF98-45 May 7, 1998

**FOR NSF USE ONLY**
NSF PROPOSAL NUMBER

| DATE RECEIVED | NUMBER OF COPIES | DIVISION ASSIGNED | FUND CODE | FILE LOCATION |
|---|---|---|---|---|
| | | | | |

EMPLOYER IDENTIFICATION NUMBER (EIN) OR TAXPAYER IDENTIFICATION NUMBER (TIN)

SHOW PREVIOUS AWARD NO. IF THIS IS
☐ A RENEWAL OR
☐ AN ACCOMPLISHMENT-BASED RENEWAL

IS THIS PROPOSAL BEING SUBMITTED TO ANOTHER FEDERAL AGENCY? YES ☐ NO ☐ IF YES, LIST ACRONYM(S)

NAME OF ORGANIZATION TO WHICH AWARD SHOULD BE MADE

ADDRESS OF AWARDEE ORGANIZATION, INCLUDING ZIP CODE

AWARDEE ORGANIZATION CODE (IF KNOWN)

NAME OF PERFORMING ORGANIZATION, IF DIFFERENT FROM ABOVE

ADDRESS OF PERFORMING ORGANIZATION, IF DIFFERENT, INCLUDING ZIP CODE

PERFORMING ORGANIZATION CODE (IF KNOWN)

IS AWARDEE ORGANIZATION (Check All That Apply)
(See GPG II D 1 For Definitions) ☐ FOR-PROFIT ORGANIZATION ☐ SMALL BUSINESS ☐ MINORITY BUSINESS ☐ WOMAN-OWNED BUSINESS

TITLE OF PROPOSED PROJECT

REQUESTED AMOUNT
$

PROPOSED DURATION (1-60 MONTHS)
months

REQUESTED STARTING DATE

CHECK APPROPRIATE BOX(ES) IF THIS PROPOSAL INCLUDES ANY OF THE ITEMS LISTED BELOW

- ☐ BEGINNING INVESTIGATOR (GPG I.A 3)
- ☐ DISCLOSURE OF LOBBYING ACTIVITIES (GPG II.D.1)
- ☐ PROPRIETARY & PRIVILEGED INFORMATION (GPG II D.10)
- ☐ NATIONAL ENVIRONMENTAL POLICY ACT (GPG II.D.10)
- ☐ HISTORIC PLACES (GPG II D 10)
- ☐ SMALL GRANT FOR EXPLOR. RESEARCH (SGER) (GPG II.D.12)
- ☐ GROUP PROPOSAL (GPG II D 12)
- ☐ VERTEBRATE ANIMALS (GPG II D 12) IACUC App. Date ____________
- ☐ HUMAN SUBJECTS (GPG II.D.12)
  Exemption No _____ or IRB App. Date ____________
- ☐ INTERNATIONAL COOPERATIVE ACTIVITIES: COUNTRY/COUNTRIES ____________
- ☐ FACILITATION FOR SCIENTISTS/ENGINEERS WITH DISABILITIES (GPG V.G.)
- ☐ RESEARCH OPPORTUNITY AWARD (GPG V.H)

PI/PD DEPARTMENT

PI/PD POSTAL ADDRESS

PI/PD FAX NUMBER

| NAMES (TYPED) | Social Security No.* | High Degree, Yr | Telephone Number | Electronic Mail Address |
|---|---|---|---|---|
| PI/PD NAME | | | | |
| CO-PI/PD | | | | |
| CO-PI/PD | | | | |
| CO-PI/PD | | | | |
| CO PI/PD | | | | |

**NOTE: THE FULLY SIGNED CERTIFICATION PAGE MUST BE SUBMITTED IMMEDIATELY FOLLOWING THIS COVER SHEET**

*SUBMISSION OF SOCIAL SECURITY NUMBERS IS VOLUNTARY AND WILL NOT AFFECT THE ORGANIZATION'S ELIGIBILITY FOR AN AWARD. HOWEVER, THEY ARE AN INTEGRAL PART OF THE NSF INFORMATION SYSTEM AND ASSIST IN PROCESSING THE PROPOSAL. SSN SOLICITED UNDER NSF ACT OF 1950, AS AMENDED

NSF Form 1207 (7/95)

## CERTIFICATION PAGE

### Certification for Principal Investigators and Co-Principal Investigators

I certify to the best of my knowledge that

(1) the statements herein (excluding scientific hypotheses and scientific opinions) are true and complete, and

(2) the text and graphics herein as well as any accompanying publications or other documents, unless otherwise indicated, are the original work of the signatories or individuals working under their supervision. I agree to accept responsibility for the scientific conduct of the project and to provide the required progress reports if an award is made as a result of this application.

I understand that the willful provision of false information or concealing a material fact in this proposal or any other communication submitted to NSF is criminal offense (U.S.Code, Title 18, Section 1001).

| Name (Typed) | Signature | Date |
|---|---|---|
| PI/PD | | |
| Co-PI/PD | | |
| Co-PI/PD | | |
| Co-PI/PD | | |
| Co-PI/PD | | |

### Certification for Authorized Organizational Representative or Individual Applicant

By signing and submitting this proposal, the individual applicant or the authorized official of the applicant institution is: (1) certifying that statements herein are true and complete to the best of his/her knowledge; and (2) agreeing to accept the obligation to comply with NSF award terms and an award is made as a result of this application. Further, the applicant is hereby providing certifications regarding Federal debt status, debarment and suspension, drugfree workplace, and lobbying activities (see below), as set forth in the *Grant Proposal Guide (GPG)*, NSF 95-27. Willful provision of false information in this application and its supporting documents or in reports required under an ensuing award is a criminal offense (U.S. Code, Title Section 1001).

In addition, if the applicant institution employs more than fifty persons, the authorized official of the applicant institution is certifying that the institution implemented a written and enforced conflict of interest policy that is consistent with the provisions of *Grant Policy Manual* Section 510; that to the best his/her knowledge, all financial disclosures required by that conflict of interest policy have been made, and that all identified conflicts of interest will been satisfactorily managed, reduced or eliminated prior to the institution's expenditure of any funds under the award, in accordance with the conflict of interest policy. Conflicts which cannot be satisfactorily managed, reduced or eliminated must be disclosed to NSF.

### Debt and Debarment Certifications (If answer "yes" to either, please provide explanation.)

Is the organization delinquent on any Federal debt? Yes ☐ No ☐

Is the organization or its principals presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal Department or agency? Yes ☐ No ☐

### Certification Regarding Lobbying

This certification is required for an award of a Federal contract, grant or cooperative agreement exceeding $100,000 and for an award of a Federal loan a commitment providing for the United States to insure or guarantee a loan exceeding $150,000.

**Certification for Contracts, Grants, Loans and Cooperative Agreements**

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress connection with the awarding of any federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements and that all subrecipients shall certify and disclose.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

| | | |
|---|---|---|
| AUTHORIZED ORGANIZATIONAL REPRESENTATIVE NAME/TITLE (TYPED) | SIGNATURE | DATE |
| TELEPHONE NUMBER | ELECTRONIC MAIL ADDRESS | FAX NUMBER |

## STATE-BY-STATE BREAKDOWN OF STAR PROGRAM AWARDS

Question: Please provide a state-by-state breakdown of recent STAR awards.

Answer: Please find attached a geographical breakdown by state for all new awards given in 1995 under the STAR Program. The map as reprinted from our Report to Congress on the STAR Program.

Appendix 3

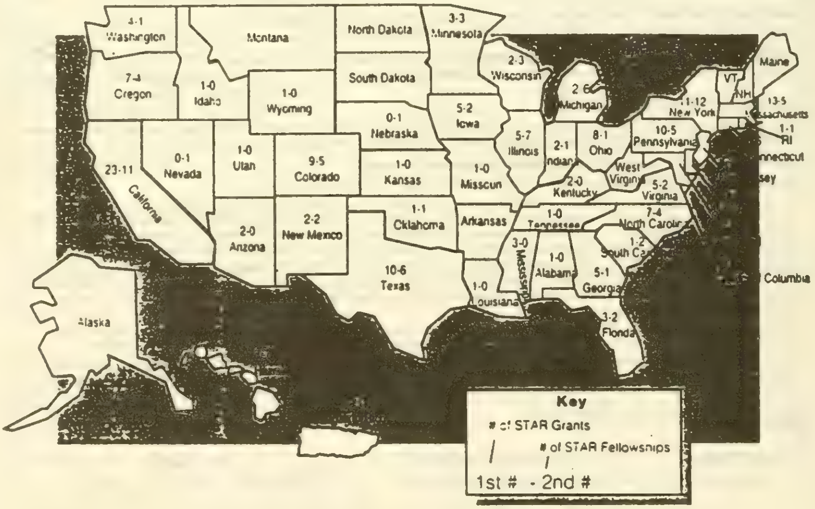
**ORD's New Grant* and Fellowship Awards by State**

*Reprinted from the Report to Congress, The Science To Achieve Results (STAR) Program EPA 600 R-96/064*

## FY95 STAR Program

### Office of Research and Development

### National Center for Environmental Research and Quality Assurance



STAR grant awards for FY95, 172 (new), $33,022,847 million

STAR fellowship awards FY95, 100 (new), $2,993,071 million

*New awards refer to grant applications awarded for the first time in this fiscal year, FY 95. The numbers shown above do not include awarded grants now in their second or third year.

## EPA'S GRADUATE FELLOWSHIP PROGRAM

Question: Please provide plans for EPA's graduate fellowship program. What are the criteria for award of fellowships? How does EPA select the environmental disciplines in which to place fellowships? Please provide a state-by-state breakdown of graduate fellowship program funds for the most recent years data is available.

Answer: EPA is planning to continue to support graduate level fellowships in discipline areas relevant to improving our overall understanding of the environment, and which will provide the expert scientists and engineers to lead the Nation's efforts to protect our valuable environmental resources into the 21st century. Our plans are to announce the availability of fellowships in the fall of each year and to ultimately support approximately 300 fellowships when the program matures in its third year.

Question: What are the criteria for award of fellowships?

Answer: The fellowships undergo review by at least three extramural scientists. The criteria used to evaluate each application include: 1) evaluation of the applicant's demonstrated dedication to their career goals; 2) evaluation of the student's organizational, analytical and written skills; 3) evaluation of the proposed course of study or curriculum; and 4) how the proposed research can be applied to technical environmental problems. EPA uses the results of the peer review to decide on the final awards, taking into consideration a balance of awards across the various disciplines, degree level, available resources and institutions.

Question: How does EPA select the environmental disciplines in which to place fellowships?

Answer: In the first two years of the Graduate Fellowship Program, EPA has selected a very broad array of scientific disciplines to sponsor under this program since there is a growing need for scientists in the areas of environmental and health sciences, and environmental engineering. Over time and with the emergence of new approaches to solving environmental problems (e.g., expansion of the science of ecosystem-wide risk assessments) the need to support various scientific fields of research will evolve and we anticipate that the disciplines considered in this program will also change accordingly.

Question: Pleae provide a state-by-state breakdown of graduate fellowship program funds for the most recent years data is available.

Answer: Please find attached a geographical breakdown by state for all new graduate fellowships awarded in FY 1995 under the STAR Program.

Appendix 3

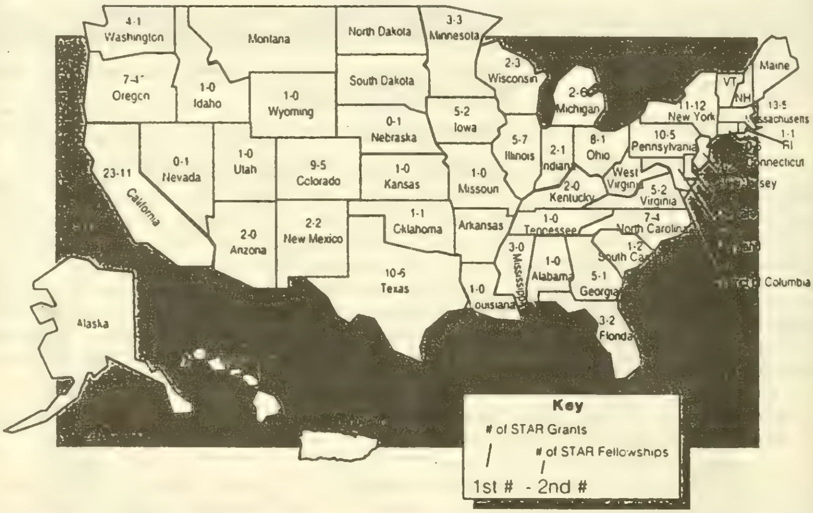
**ORD's New Grant* and Fellowship Awards by State**

*Reprinted from the Report to Congress.*
*The Science To Achieve Results (STAR)*
*Program EPA/600/R-96/064*

## FY95 STAR Program

### Office of Research and Development

### National Center for Environmental Research and Quality Assurance



STAR grant awards for FY95, 172 (new), $33,022,847 million

STAR fellowship awards FY95, 100 (new), $2,993,071 million

*New awards refer to grant applications awarded for the first time in this fiscal year, FY 95. The numbers shown above do not include awarded grants now in their second or third year.

## EPA RESEARCH FUNDING BY STATE

Question: Please provide a table listing the distribution of all EPA research funding by state for the three most recent years this data is available.

Answer: The attachment provided displays information on EPA research obligations for contracts and assistance agreements by fiscal year and performance state for Fiscal Year 1993, 1994 and 1995 for EPA.

**EPA Research Contracts and Grants by State**
**Fiscal Years 1993, 1994, 1995**

(Dollars in Thousands)

| State/Territory | Obligations 1993 | Obligations 1994 | Obligations 1995 |
|---|---|---|---|
| Alabama | $6,026 | $5,810 | $4,332 |
| Alaska | $642 | $0 | $1,224 |
| Arizona | $2,737 | $729 | $3,065 |
| Arkansas | $265 | $1,180 | $692 |
| California | $13,938 | $15,035 | $25,367 |
| Colorado | $3,539 | $1,707 | $6,364 |
| Connecticut | $6,018 | $1,716 | $1,372 |
| Delaware | $521 | $1,242 | $522 |
| District of Columbia | $14,133 | $155,680 | $60,381 |
| Florida | $14,170 | $12,277 | $18,670 |
| Georgia | $15,237 | $17,638 | $18,054 |
| Hawaii | $15 | $0 | $246 |
| Idaho | $489 | $585 | $769 |
| Illinois | $1,133 | $1,796 | $3,941 |
| Indiana | $180 | $1,088 | $2,632 |
| Iowa | $1,378 | $1,259 | $2,766 |
| Kansas | $90 | $4,351 | $4,970 |
| Kentucky | $3,220 | $526 | $1,221 |
| Louisiana | $1,799 | $2,409 | $5,868 |
| Maine | $2,600 | $1,757 | $585 |
| Maryland | $8,109 | $8,617 | $6,563 |
| Massachusetts | $24,701 | $19,823 | $25,613 |
| Michigan | $4,408 | $12,541 | $21,216 |
| Minnesota | $4,846 | $10,376 | $18,028 |
| Mississippi | $460 | $538 | $1,196 |
| Missouri | $2,666 | $1,723 | $1,434 |
| Montana | $610 | $134 | $205 |
| Nebraska | $520 | $45 | $79 |
| Nevada | $16,330 | $10,219 | $12,583 |
| New Hampshire | $250 | $333 | $500 |
| New Jersey | $1,614 | $2,381 | $8,228 |
| New Mexico | $420 | $857 | $2,305 |
| New York | $5,062 | $5,879 | $7,333 |
| North Carolina | $92,766 | $117,578 | $116,206 |
| North Dakota | $1,600 | $2,497 | $1,318 |
| Ohio | $33,255 | $47,838 | $58,992 |
| Oklahoma | $7,372 | $4,403 | $8,880 |
| Oregon | $10,512 | $11,801 | $20,509 |
| Pennsylvania | $3,090 | $2,671 | $4,910 |
| Puerto Rico | $96 | $395 | $165 |
| Rhode Island | $7,403 | $7,247 | $10,362 |
| South Carolina | $428 | $521 | $465 |
| South Dakota | $259 | $99 | $0 |
| Tennessee | $1,176 | $1,056 | $1,101 |
| Texas | $13,471 | $14,021 | $16,940 |
| Utah | $2,165 | $0 | $1,259 |
| Vermont | $309 | $204 | $51 |
| Virginia | $35,729 | $37,979 | $33,903 |
| Washington | $978 | $858 | $2,145 |
| West Virginia | $214 | $308 | $10 |
| Wisconsin | $1,939 | $1,748 | $2,010 |
| Wyoming | $460 | $40 | $477 |
| *Total* | *$371,348* | *$551,515* | *$548,025* |

## EPSCoR PROGRAM AND ACCOMPLISHMENTS

Question: Please describe EPA's EPSCoR program and its accomplishments to date. Include a summary of state awards.

Answer: EPA's EPSCoR program is modeled after the NSF program which has provided the national leadership role for EPA and other agencies involved in EPSCoR programs. EPA's program was appropriated funds for fiscal years 1991, 1993, 1994, and 1995 through Congressional earmarks.

In FY 1991, planning grants were awarded to the 18 EPSCoR states and a Commonwealth identified by NSF as eligible participants. The EPSCoR participants were: Alabama, Arkansas, Idaho, Kansas, Kentucky, Louisiana, Maine, Mississippi, Montana, Nebraska, Nevada, North Dakota, Oklahoma, South Carolina, South Dakota, Vermont; West Virginia, Wyoming, and the Commonwealth of Puerto Rico. The EPSCoR participants received approximately $50,000 in planning grants with a one-to-one matching requirement as their contribution to the overall effort. The planning grants were designed to help EPSCoR participants develop multi-year strategies for environmental research and human resource plans.

In FY 1993 the Agency issued a solicitation for merit-based competition for EPSCoR proposals to implement research programs that were developed through planning grant activities. The implementation proposals submitted by the EPSCoR participants underwent a comprehensive peer review. Based on the results of the peer review, two awards were issued in FY 1993 to Alabama and South Carolina, five in FY 1994 to Nevada, North Dakota, Puerto Rico, Idaho, and Kansas, and in FY 1995 three awards were issued to Kentucky, Mississippi and Wyoming. Each implementation grant award was funded for a two-year period and required a minimum one-to-one non-federal match. A description of awards given in FY 1993, FY 1994, and FY 1995 follows:

## FY 1993

Alabama: Studies are designed to measure the impact of high levels of carbon dioxide gas on plant tissues, disease and insect interactions, plant anatomy and enzymes.

South Carolina: Studies will be conducted on organic transformations in supercritical water, and measurement of tolerance levels in organic compounds.

## FY 1994

Nevada: This research will focus on the control and remediation of wastes associated with precious metals, environmental studies on soil, and the relationship among air quality, meteorology and climate in an arid environment.

North Dakota: This research is designed to focus on heavy metal detoxification in plant and animal cells and the metabolism of organic compounds.

Puerto Rico: Studies will focus on the chemistry of precipitation and air in tropical forest environments, the toxicity of compounds absorbed to surfaces of atmospheric particles, and aquatic pollution.

Idaho: Research will focus on the biodegradation of mixtures of solvents and identification of non-volatile organic matter in groundwater.

Kansas: Research will study the fate and transport of heavy metals in mine tailings and alluvial soils and identification of the role of methane-utilizing bacteria in natural habitats.

FY 1995

Kentucky: Research will (1) characterize the routes and mechanisms by which gravitational water is collected laterally as it moves downward from the surface into a karst; (2) evaluate the potential transport capacity of selected herbicides and heavy metals by readily dispersible colloidal materials fractionated from selected soil samples; and (3) study the toxicity of PCBs and biomarkers associated with PCB.

Wyoming: Research will (1) investigate the potential for microbial processes to control directly organic contaminants by oxidation and indirectly heavy metals through inorganic reactions associated with the formation sulfide during sulfidogenesis; and (2) obtain observational data that will facilitate the identification of local sources of air pollution leading to visibility deterioration so that remedial strategies can be formulated.

Mississippi: Research will study the singular and interactive fate and effects of agricultural materials in wetland ecosystems through a replicated field-scale experiment.

Please see the attached table which summarizes the amount of the awards for 1993, 1994, and 1995.

**SUMMARY of ALL EPSCoR IMPLEMENTATION AWARDS (DOLLARS)**

| State (by fiscal year) | | EPA | State Match | TOTAL |
|---|---|---|---|---|
| 1993 | Alabama | 400,000 | 610,609 | 1,010,609 |
| | South Carolina | 400,000 | 400,000 | 800,000 |
| | **TOTALS** | 800,000 | 1,010,608 | 1,810,609 |
| 1994 | Nevada | 394,000 | 460,749 | 854,749 |
| | North Dakota | 394,000 | 414,029 | 808,029 |
| | Puerto Rico | 394,000 | 574,592 | 968,592 |
| | Idaho | 394,000 | 543,743 | 937,743 |
| | Kansas | 394,000 | 1,042,004 | 1,436,004 |
| | **TOTALS** | 1,970,000 | 3,035,117 | 5,005,117 |

**SUMMARY of ALL EPSCoR IMPLEMENTATION AWARDS (DOLLARS)**

| State (by fiscal year) | | EPA | State Match | TOTAL |
|---|---|---|---|---|
| 1995 | Kentucky | 326,666 | 498,936 | 825,601 |
| | Wyoming | 326,667 | 463,059 | 789,726 |
| | Mississippi | 326,667 | 551,360 | 878,027 |
| | **TOTALS** | 980,000 | 1,513,355 | 2,493,354 |
| **GRAND TOTALS** | | 3,750,000 | 5,559,080 | 9,309,080 |

## SUMMARY OF MAJOR DISINVESTMENTS

Question: ORD's budget request includes "disinvestments" from research on global change, tropospheric ozone, air toxics, stratospheric ozone, lead, advanced manufacturing, and high performance computing. Reductions are also made to the National Human Exposure Assessment Survey (NHEXAS). Please describe how much was reduced in each area and the rationale in each case.

Answer: ORD's FY 1997 Science priorities were developed in the context of the ORD Strategic Plan using a risk-based priority process. Using this process, ORD determined the most critical research needs for the FY 1997 budget. In this process, ORD applied criteria pertaining to human and ecological health, risk management, and methods and model development to evaluate and rank potential research topics. ORD decision makers asked the following questions when using this process to weigh potential research topics: 1) which problem areas represent the greatest risk? 2) what areas represent the greatest uncertainty in risk assessment? and, 3) where is the greatest opportunity to reduce the cost of or increase the efficacy of risk management?

Priority was given to research that would make the greatest contribution to reducing the uncertainty associated with risk characterization. As a result of this decision process, a number of topics were deemed to have low uncertainty associated with their risk characterizations, and thus were determined to be of lower priority and were selected as areas for disinvestment.

The following compares resource levels between the FY 1996 enacted operating plan and FY 1997 President's Budget Request (dollars are in thousands)for each of the following research disinvestment areas:

o Global Climate Research
(FY 1996 - 33.4 FTE and $13,968.8 extramural/FY 1997 - 36.6 FTE and $7,625.9 extramural)

In determining the research program resources for FY 1997, the Agency used a risk assessment/risk management paradigm to set priorities and make decisions on the nature and direction of research areas. As such, under the Global Climate Research the Agency will focus its research efforts primarily on the regional vulnerabilities regarding the potential effects of climate change.

This is where EPA can make significant contributions to reducing the uncertainties in this area. Resources will be shifted from carbon flux tracking since this area is better understood.

o **Stratospheric Ozone Depletion**
(FY 1996 - 7.0 FTE and $2,761.4 extramural/FY 1997 - 5.4 FTE and $835.2 extramural)

The Agency has supported a six site ultraviolet (UV-B) monitoring network aimed at providing the first comprehensive long-term data on UV levels in U.S. urban areas. The monitoring data would be used to develop risk estimates and provide data to verify predictions of UV exposure which are issued daily by the National Weather Service using UV-exposure index developed by EPA. The daily index informs the public about UV exposure risks. This effort is being redirected to Ecosystems Protection Research where a number of monitoring sites will be established as part of a long-term monitoring program. Work at these sites will focus on problems such as effects of increased UV-B radiation on plankton, amphibians, plants, etc. This effort represents a redirection from sites in urban areas to sites located in vulnerable ecological regions.

O **Air Toxics Research**
(FY 1996 - 98.4 FTE and $12,872.1 extramural/FY 1997 - 82.4 FTE and $9,102.0 extramural)

For Major Sources Research, since the implementation of technology-based standards is well under way, research will shift emphasis from support of these technology-based standards toward health-based evaluations for residual risk determinations. This shift is required to support the Program Office which must implement health-based evaluations of major sources beginning in 1999. In support of this effort, research will be conducted to develop toxicity data, routes of exposure, and risk assessment methods to better assess cancer and noncancer risks for hazardous air pollutants. Specific issues to be addressed include quantifying of risks, evaluating acute exposure risks, and assessing mixtures. Research will also continue, but at a reduced level, for source test methods to enable measurement of hazardous air pollutants emissions. Emphasis will shift from the development to the field testing, evaluation, and application of improved chemical process monitoring technologies.

Major Sources Research will also include the identification, development, and evaluation of control technologies to reduce or eliminate toxic organics and metals from small stationary sources including industrial boilers, incinerators, and chemical manufacturing. The overall approach is to identify promising technologies which perform as well or better than existing technologies and cost less. The primary emphasis of the program will be to investigate integrated technologies which have the potential to simultaneously reduce multiple pollutants. Support will also be provided to operate the Control Technology Center, which is recognized as one of the most successful technology transfer programs in the Agency.

For Great Waters Research, the reduction relates to the completion of work in FY 1996 to improve mercury monitoring methods, operating a monitoring network in the Great Lakes Basin to test these methods, and conducting intensive monitoring field campaigns near major "Great Water" urban areas by testing sampling and modeling techniques for dry deposition of mercury and other hazardous air pollutants.

O **Tropospheric Ozone**
(FY 1996 - 98.2 FTE and $18,698.3 extramural/FY 1997 - 71.2 FTE and $14,553.0 extramural)

In determining the research program resources for FY 1997, EPA used a risk assessment/risk management paradigm to set priorities and make decisions on the nature and direction of research programs. Due to the need to provide additional resources for the research area of particulate matter (PM10), support for NARSTO will be reduced. The FY 1997 President's Budget request still provides for significant funding for NARSTO in the following areas: (1) research atmospheric chemistry and modeling to produce and evaluate an atmospheric model addressing the deficiencies in current urban and regional models used for National Ambient Air Quality Standards attainment demonstrations; (2) develop and refine emissions models and methodologies to improve estimates of tropospheric ozone precursors emitted from mobile and biogenic sources; (3) improve methods to physically observe ambient VOC and NOx chemistry and ozone formation and the testing of these methods in regional field studies; and (4) study low-cost control technologies to reduce NOx emissions from combustion sources. EPA will rely on other public and private sponsors of NARSTO to increase their proportional contributions where we have been the principal supporter in the past.

In areas other than NARSTO, resources will also be shifted to other health issues such as $PM_{10}$ since a substantial amount of work on the acute effects of ozone has been completed and there is a current solid foundation of ongoing studies of the chronic effect of ozone on health.

o **Lead Research**
(FY 1996 - 9.1 FTE and $574.8 extramural/FY 1997 - 2.1 FTE and $220.9 extramural)

The reductions in FY 1997 to lead research reflect the maturity of this research area. The uncertainties associated with lead are well understood in the science community. Thus, during the risk-based prioritization process, the reduced and/or eliminated projects were ranked lower than other, higher-risk projects.

O **Advanced Manufacturing**
(FY 1996 - 3.4 FTE and $86.9 extramural/FY 1997 - 0.0 FTE and $0.0 extramural)

As a result of the risk-prioritization process, this program was eliminated in FY 1997. Resources have been redirected to activities which support the Agency's pollution prevention efforts, focusing particularly on common sense industries.

O **NHEXAS (National Human Exposure Assessment Survey)**
(FY 1996 - .5 FTE and $2,000.0 extramural/FY 1997 - 0.0 FTE and $0.0 extramural)

The decrease in FY 1997 reflects the delay of Phase II of the National Human Exposure Assessment Survey (NHEXAS). The NHEXAS pilot study (Phase I) will be completed with FY 1996 funds and will result in the development, evaluation and assessment of human exposure measurements. No funding has been requested in FY 1997 for Phase II of NHEXAS since peer reviews of the NHEXAS pilot study are not to be completed.

o **High Performance Computing and Communications**
(FY 1996 - 1.0 FTE and $7,651.1 extramural/FY 1997 - 6.3 FTE and $5,201.4 extramural)

Reductions in FY 1997 are the result of the completion in FY 1996 of the initial development phase of a computational platform that will provide modeling projections for the country's tropospheric ozone, fine particulate, acid deposition, and air toxics problems. Development of this model will continue in FY 1997 at a slower pace using in-house resources. In addition, this reduction will delay the development of an integrated multimedia modeling system for ecosystem assessment and will eliminate research on new technologies for scientific collaboration, public access to environmental data, and information synthesis and analysis methods.

ORD ASSESSMENT OF TECHNICAL ASSISTANCE TO AGENCY PROGRAM OFFICES

Question: According to a recent article in "Inside EPA," ORD is undertaking a review of the way it provides technical assistance to agency program offices. The article says "ORD has decided to reassess its technical assistance program in order to identify areas that should be emphasized an de-emphasized in the future. One ORD source stresses that it is clear that duplicative capabilities are currently shared by ORD and the program offices and this effort will attempt to find areas where efficiencies could be found. In addition to identifying duplicative capabilities that could be de-emphasized, another EPA source says that the evaluation will also assist ORD target its technical assistance resources in areas where no suitable program office capability exists." Please explain the status of this assessment, when it will be completed, and how the findings will be used.

Answer: ORD, the program offices, and the Regions are working together on an effort to implement a more systematic process to identify the types and quantities of technical support to be provided by the Office of Research and Development. This effort was intended to ensure more efficient use of available resources, greater input by the programs and Regions, permit long term planning, allow new and changing needs to be readily incorporated, and provide for an orderly transition out of technical support activities that should be phased out.

A process (see attachment) is being developed that ensures technical support decisions are made at the appropriate levels of the organization, have input from all parties, and is consistent and responsive to program, Regional, and ORD needs. To develop this process, the following activities are being developed by ORD, the program offices, and Regions:

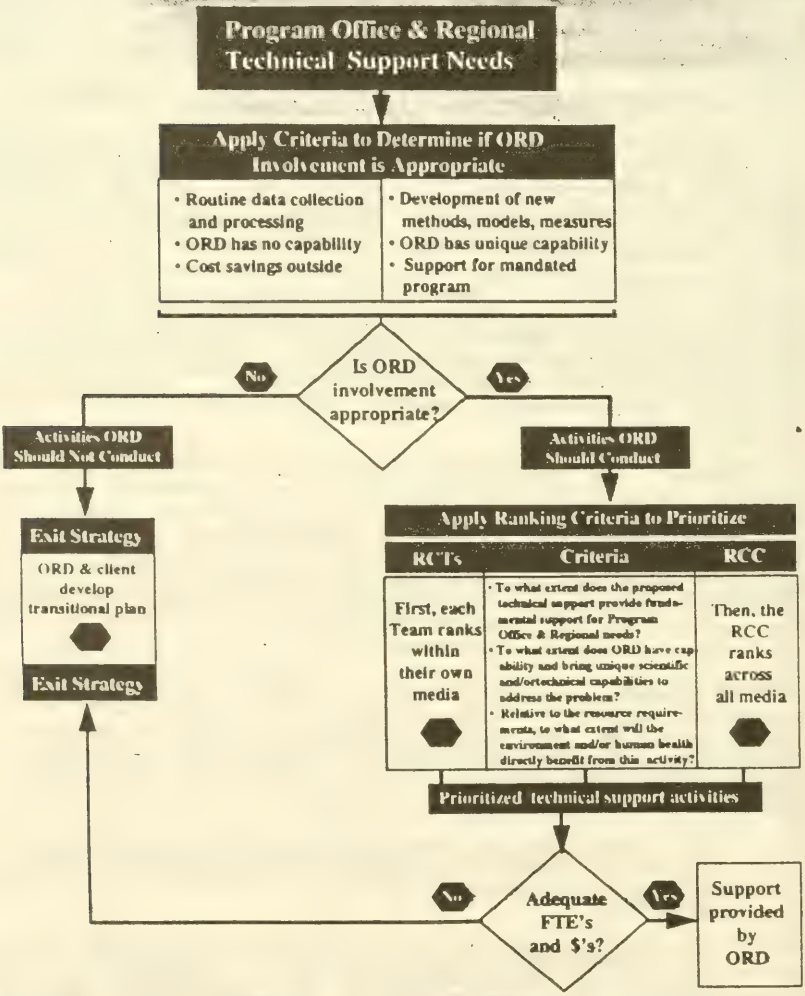
1) Inventories are being assembled of all technical support activities conducted or supported by ORD, program offices, and Regions. Resources associated with each activity are identified.

2) Criteria consistent with the ORD strategy and the Agency mission are being identified to: 1) determine if a given activity is appropriate for ORD involvement, and 2) set priorities for technical support funding.

3) A mutually agreed upon definition of technical support is being developed.

It is expected that this process will be finalized by October 1996.

## Setting ORD Technical Support Priorities


Program Office & Regional Technical Support Needs
Apply Criteria to Determine if ORD Involvement is Appropriate
• Routine data collection and processing
• ORD has no capability
• Cost savings outside
• Development of new methods, models, measures
• ORD has unique capability
• Support for mandated program
Is ORD involvement appropriate?
No
Yes
Activities ORD Should Not Conduct
Exit Strategy
ORD & client develop transitional plan
Exit Strategy
Activities ORD Should Conduct
Apply Ranking Criteria to Prioritize
RCTs
Criteria
RCC
First, each Team ranks within their own media
• To what extent does the proposed technical support provide fundamental support for Program Office & Regional needs?
• To what extent does ORD have capability and bring unique scientific and/or technical capabilities to address the problem?
• Relative to the resource requirements, to what extent will the environment and/or human health directly benefit from this activity?
Then, the RCC ranks across all media
Prioritized technical support activities
Adequate FTE's and $'s?
No
Yes
Support provided by ORD

RCTs = Research Coordination Teams, include Program, ORD, and Regional Representatives.
RCC = Research Coordination Council, includes Program, ORD, and Regional Representatives
⬢ = Programs, Regions, ORD are involved in decision process.

LS/CZ – 5/16/96

## UTILITY REPORT

Question: What is the status of EPA's Report to Congress on emissions from utilities?

Answer: The Agency has two court-ordered deadlines which include June 29, 1996 for the Interim Report to Congress and December 15, 1996 for the Final Report to Congress. It appears we will be unable to meet these deadlines and we are negotiating with the plaintiffs for an extension. We met with the litigants on June 21 and negotiated a 30-day temporary extension to allow us to complete our discussions. Until a new settlement is reached, the substance of settlement negotiations is confidential.

Question: Why did the Agency plan to use material from a mercury report which was not released due to concerns about the quality of information and pending additional scientific research?

Answer: The Agency does not plan to use in the interim or final utility report any of the mercury report material considered controversial by the interagency reviewers.

## FOREIGN REFINER BASELINE

Question: The World Trade Organization recently rejected EPA's current rules for imported reformulated and conventional fuels. What options are currently under consideration by EPA and the U.S. Trade Representative to respond to the WTO ruling? Are options under consideration which would result in imports of "dirtier" RFG and conventional fuels? Should EPA decide to change its final RFG and conventional rules, will any new EPA proposal be subject to a full and complete administrative rule-making?

Answer: On June 19, 1996 the United States announced that it intends to meet its obligations under the World Trade Organization (WTO) as they apply to imported gasoline.

This announcement is made in response to the April 29, 1996, finding of the Appellate Body of the World Trade Organization which concluded that the EPA's establishment of different requirements for imported gasoline and domestically produced gasoline discriminates against importers from Brazil and Venezuela, in violation of WTO rules.

We have initiated a process which will examine any and all options for compliance. Our examination will be an open process. All comments and options will be carefully considered and the outcome will not be prejudged or decided before the completion of this process. In evaluating options, a key criterion will be fully protecting public health and the environment.

EPA issued a Federal Register notice on June 28 offering all interested parties an opportunity for input into this process.

## EPA PLANS TO IMPLEMENT TRI PHASE 3

Question: What are EPA's plans to implement TRI Phase 3, a proposal to require reporting and dissemination to the public information about chemical uses?

Answer: EPA senior management is committed to proceeding with this project, and is currently reviewing options on the process to use for further development. Additional evaluation and comments are needed prior to developing a proposal. We expect to make a decision shortly, and the Agency will communicate the decision to potential stakeholders.

Question: Aren't risks which may be associated with chemical use already being effectively managed and that if EPA were to undertake the necessary risk prioritization, risks associated with chemical use would not be accorded a high priority?

Answer: EPA believes that chemical use information will improve understanding on a range of important issues. Some are related to effective risk management, such as the flow of toxics through communities. However, chemical use data are also useful for looking at other issues as well. For example, materials accounting information can be used to track pollution prevention progress and efficiency of chemical use, both important for long-term sustainability. Chemical use information is an improvement over release and waste information for looking at occupational issues. Materials accounting can help identify cases where toxics in the product stream are likely to play an important role. Lastly, by improving accountability, chemical use information supports new smarter approaches to environmental protection, such as involving local communities, moving to multi-media permitting, encouraging flexible and innovative approaches, and focusing on environmental performance.

Question: Has the Agency paid adequate attention to the need to protect proprietary business information?

Answer: The TRI-Phase 3 public meetings have been very helpful in gaining a better understanding of the need to protect proprietary business information. EPA recognizes this as one of the key TRI-Phase 3 issues. EPA is confident that common sense safeguards can be developed to protect it. EPA will not create a program that will divulge sensitive business information.

## POLLUTANT RELEASE AND TRANSFER REGISTRY

Question: What is the Pollutant Release and Transfer Registry?

Answer: Pollutant Release and Transfer Registers (PRTRs) is the term used internationally for emissions inventories. The United States has had an operational PRTR since 1987, known as the Toxics Release Inventory (TRI). Many other countries have recognized the value of these systems, with PRTRs now in existence in Canada, the Netherlands, Norway, and the United Kingdom. Other nations currently are creating PRTRs, including Australia, France and Sweden. Countries ranging from Japan to Brazil to South Africa are considering implementing PRTRs.

Question: Why is EPA proceeding with use reporting as part of PRTR when the Agency has publicly stated that it would not proceed in the international arena with any initiative that had not been resolved domestically?

Answer: The United States has not advocated use reporting or any other expanded utilization PRTRs. In a recent paper to the International Forum on Chemical Safety (IFCS), the United States mentioned that use reporting is an example of the types of additional reporting that is possible for PRTRs. The paper also mentioned non-point source data collection by the Netherlands, a type of data for which EPA does not plan to require reporting. The intent was to highlight the ability of PRTRs to be used for different purposes by different countries. EPA presently is amending the IFCS paper to meet the concerns of industry on the subject of use reporting.

## PUBLIC/PRIVATE PARTNERSHIPS IN THE WWT AREA

Question: EPA estimates that publicly owned treatment works will need nearly $ 130 billion in capital investment over the next 20 years to meet Clean Water Act regulations. The current need appears to exceed the amount of funding that can reasonably be provided by the Congress.

Second, as existing wastewater treatment works near or reach the end of their useful life, the need for additional funding will increase. If given an opportunity, the private sector can provide the necessary equity for capital improvements, expansions and upgrades which are desperately needed by local government to meet public health and environmental standards. This can be accomplished by eliminating barriers to public/private partnerships.

I understand that EPA has some experience with public/private partnerships in the wastewater treatment area, would you provide the subcommittee with the details.

Answer: As part of the Office of Water's public-private partnership (P3) initiative, EPA sponsored three pilot projects: Indianapolis, IN; the Miami Conservancy District in Franklin, Ohio; and Silverton, OR. Indianapolis has entered into a contract in January 1994 with a private consortium for the operation and management (O&M) of its two tertiary wastewater facilities. Franklin entered into an "asset sale" privatization with a private firm in 1995. Consistent with E.O. 12803, EPA approved this public-private partnership transaction which involved a federally-funded wastewater treatment plant. Silverton, OR has chosen not to pursue to privatize their wastewater treatment facility. EPA is currently working with several other communities that are considering wastewater privatization options.

EPA is currently working with several communities that are considering wastewater privatization options. Federal funding is not the only source of funding available to meet the 20 year need. Our approach would have the State Revolving Funds (SRF) revolve at around $ 2 billion per year after the federal capitalization period ends. Over 20 years, when coupled with the initial capitalization, this will result in $60 to $70 billion or almost one half the currently identified needs.

## EPA'S ROLE IN ENCOURAGING PUBLIC/PRIVATE PARTNERSHIPS IN THE WWT AREA

Question: What is EPA doing to promote and encourage additional public/private partnerships in the wastewater treatment area? Should EPA have a role in promoting such partnerships?

Answer: EPA strives to promote flexibility for our State and local partners in their role of protecting our environment. We see public-private partnerships as one of many financing options available to communities to meet their infrastructure needs. We see our role as one of facilitating the transfer of information at the

Federal, state and local government levels about all of the financing tools available in order to augment a community's ability to protect the environment. Thus, we promote private/public partnerships as an option for communities, but we are not promoting it as the preferred option.

## IMPEDIMENTS TO PRIVATE INVESTMENT IN MUNICIPAL WWT FACILITIES

Question: According to the Joint Economic Committee barriers in federal regulations and the tax code have combined to impede private investment in municipal wastewater treatment facilities.

What impediments are within EPA's control that, if removed, would facilitate public/private partnerships and encourage the state and local governments to use qualified private sector entities before coming to the Federal government?

Answer: None. The federal regulations referred to above are either government-wide or IRS regulations. As far as EPA regulations go, we continue to work with local agencies to be sure the privatization option is available if they so desire.

## STEPS EPA HAS TAKEN TO ENCOURAGE STATE AND LOCAL GOVERNMENTS

Question: What steps have EPA taken or are planned to remove these impediments and encourage state and local governments to look to the private sector?

Answer: EPA's pilot project program -- that sponsored privatization efforts in Indianapolis and Franklin, OH -- was designed to pinpoint federal regulatory impediments to privatizing assets financed with federal grants. With the experience from the pilot projects, we believe that EPA can meet the needs of communities as they look to privatization as an option to meet their environmental mandates.

## WETLANDS PERMIT VETO ACTIONS

Question: In a November 1, 1995, hearing before the EPW subcommittee with oversight over wetlands, the Assistant Administrator (Mr. Perciasepe) said with respect to the EPA's coveted veto authority over Corps-issued permits that: "In a survey that we did from 1993 of 5,000 permits across the country, 7 times in letter or phone call or some other way did EPA suggest that the project might be vetoed." Please provide for the Subcommittee a copy of this survey and please provide a detailed account of the issues surrounding the 7 veto threats and the final disposition of these permitting actions.

Answer: Attached is the Army Corps of Engineers Headquarters survey on Section 404(c). The information requested in the survey by Corps Headquarters concerning EPA's veto threats did not include reference to specific projects and, therefore, we cannot respond to that aspect of your question.

## SECTION 404(c) SURVEY

***The following questions refer to the Denial or Restriction of Disposal Sites; Section 404(c) Procedures at 40 CFR Part 231 (October 9, 1979) and pertain to standard individual permit applications completed in calendar year 1993.***

1. What is the total number of standard individual permit applications that were completed in calendar year 1993? ________

2. Estimate the number of total standard individual permit applications where EPA, after indicating that they may review or "veto" the proposed project under 404(c) of the CWA (i.e., threatened use of 404(c) as a delay for the applicant), discussed or negotiated alternatives, mitigation or other project modifications with the Corps and/or applicant. *Note: The "indication" from EPA may have been given informally, as direct verbal or written communication to the Corps, or as hearsay from the applicant, news articles, etc.; or formally, as official written notice from the Regional Administrator to the District Engineer, owner of record of the site and the applicant, that the RA intends to issue a public notice of a proposed determination to prohibit or withdraw the specification, or to deny, restrict or withdraw the use for specification of any defined area as a disposal site, as outlined in 40 CFR Part 231.3(a)(1).*

TOTAL No. _____

Informal - Direct verbal or written knowledge
No. _____

Informal - Hearsay
No. _____

Formal - Written notice of intent to issue PN of proposed determination
No. _____

3. Of the number of formal written notices of intent indicated in question 2, how many resulted in the actual publishing of a public notice of proposed determination by the Regional Administrator? _____

4. Estimate the number of total standard individual permit applications where the threat of 404(c) affected the final action decision in terms of additional environmental protection 1) above what the Corps would have required to meet existing statutory and regulatory requirements but still within reason, and 2) far in excess of statutory and regulatory requirements where the applicant was pressured to provide too much mitigation, or unreasonably modify their project.

| | |
|---|---|
| Above Required | No. _____ |
| Excessive/Unreasonably Modify | No. _____ |

5. Estimate the average number of days added to the processing time of standard individual permit applications due to the threat of 404(c).
_____ days

6. In your opinion, are there any problems with the threat or use of 404(c)? If so, what are some of the major problems with, or misuses of, the 404(c) procedures?
____________________________________________
____________________________________________
____________________________________________
____________________________________________

# 404(c) SURVEY: SUMMARY OF QUESTION 1-5

| District | CY93 # SPs | # of SP's where use of 404(c) was indicated by EPA | | | | Of Formal # of PNs from RA | # Above Required | # Excessive/ Unreasonably Modify | # Days Added |
|---|---|---|---|---|---|---|---|---|---|
| | | Total | Direct | Hearsay | Formal | | | | |
| LMM | 45 | 0 | 0 | 0 | 0 | ---- | 0 | 0 | 0 |
| LMN | 556 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LMS | | 0 | 0 | 0 | 0 | N/A | N/A | N/A | 0 |
| LMK | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MRK | 98 | 0 | 0 | 0 | 0 | N/A | N/A | N/A | 0 |
| MRO | | | | | | | | | |
| NED | 98 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 180 |
| NAB | 458 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NAN | 249 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 800 |
| NAO | 139 | 1 | 1 | 0 | 0 | N/A | 0 | 0 | 0 |
| NAP | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NCB | 123 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NCC | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NCE | 500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NCR | 176 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NCS | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| District | CY 93 # SPs | # of SP's where use of 404(c) was indicated by EPA | | | | Of Formal # of PNs from RA | # Above Required | # Excessive/ Unreasonably Modify | # Days Added |
|---|---|---|---|---|---|---|---|---|---|
| | | Total | Direct | Hearsay | Formal | | | | |
| NPA | 287 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NPP | 74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NPS | 83 | 0 | 0 | 0 | 0 | N/A | 0 | 0 | 0 |
| NPW | 32 | 0 | 0 | 0 | 0 | N/A | 0 | 0 | 0 |
| ORH | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | N/A |
| ORL | | | | | | | | | |
| ORN | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ORP | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| POD | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SAC | 174 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SAJ | 479 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 60 |
| SAM | 136 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SAS | 158 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SAW | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SPL | 48 | 0 | 0 | 0 | 0 | N/A | 0 | 0 | 0 |
| SPK | 80 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| SPN | | | | | | | | | |

| District | CY 93 # SPs | # of SPs where use of 404(c) was indicated by EPA | | | | Of Formal # of PNs from RA | # Above Required | # Excessive/ Unreasonably Modify | # Days Added |
|---|---|---|---|---|---|---|---|---|---|
| | | Total | Direct | Hearsay | Formal | | | | |
| SWA | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | N/A |
| SWP | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SWG | 297 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SWL | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SWT | 34 | 0 | not aware of | 0 | 0 | 0 | 0 | 0 | 0 |

## 404(c) SURVEY: SUMMARY OF QUESTION 6

| District | Any problems with the threat or use of 404(c)? If so, what are some of the major problems with, or misuses of, the 404(c) procedures? |
|---|---|
| LMM | Veto authority has been rarely utilized within the Memphis District. |
| LMN | ----- |
| LMS | While we have been "threatened" with the possibility of 404(c) elevation, it has no been pursued. We feel the St. Louis District policy to conduct pre-apps for all IP's has successfully eliminated potential controversies. |
| LMK | EPA has not threatened use of 404(c). |
| MRK | No problems. EPA needs to take a more active role in its program. Formal (c) actions would serve useful purposes (help develop policy & focus program priorities, spread the load, give the program teeth & direction, give daily importance to ACE role as objective "evaluators" instead of smug "decision makers." |
| MRO | |
| NED | Threats on several recent cases (still pending); initiated process on one. Confusion as to who's in charge of process, and delays. Threats occur late in Corps process after all other parties are satisfied and have acted in good faith. |

| District | Any problems with the threat or use of 404(c)? If so, what are some of the major problems with or misuses of the 404(c) procedures? |
|---|---|
| NAB | No. |
| NAN | Please refer to the New York District's policy level elevation which varies concerns of abuse of 404(c) and (q) by EPA. |
| NAO | EPA should not wait until the end of the NEPA/404 process to issue a veto. They should not be wasting applicant and Corps time if they intend to veto. A 404(c) veto was threatened during the NEPA process which resulted in unnecessary meetings. If they were serious, they should have acted because nothing was accomplished by threatening a veto. |
| NAP | No problems experienced or perceived by this District. This determination is due to the District's continued efforts to maintain interagency coordination especially when controversial/complex projects are involved. It is felt that the continued use of preapplication meetings that involve all Federal agencies greatly minimizes any potential that the District will become involved in a 404(c) action. |
| NCB | ----- |
| NCC | N/A |
| NCE | ----- |
| NCR | Not a problem because staff is effective in resolving issues; also, unwillingness of EPA to do anything closely associated with taking responsibility or making a final decision. |
| NCS | St. Paul has not experienced problems with the threat of 404(c). |
| NPA | Where and when 404(c) has been used, EPA has used the process to second guess other aspects of the Corps' decision (they have not limited their action to significant degradation thresholds under the 404(b)(1) guidelines). For example, the 404(c) action has also addressed practicable alternatives, economics, etc. |
| NPP | Portland has experienced no major problems. |
| NPS | NPS received one comment letter on a public notice indicating intent to use 404(c) procedures. EPA stated at a public wetlands seminar that they threatened 404(c) as a protest against the 1992 MOA procedures. For a time, the applicant (project is subject to state and Federal EIS's) was very concerned that EPA could stop their project after considerable expense. NPS believes this is a serious misuse of the procedure. |
| NPW | N/A |

| District | Any problems with the threat or use of 404(c)? If so, what are some of the major problems with or misuses of the 404(c) procedures? |
|---|---|
| ORH | No. |
| ORL | |
| ORN | No. |
| ORP | No. |
| POD | None. |
| SAC | ----- |
| SAJ | Disagreement over what constitutes an ARNI. |
| SAM | No problems. |
| SAS | The only case in which we have been threatened with 404(c) was Lake Alma. In this case EPA did implement 404(c), but only after we made a decision to issue. I believe the public would have been better served if EPA had taken their action first. |
| SAW | No. |
| SPL | CESPL-CO-R sees no problem with the way Region IX of the EPA is using 404(c). |
| SPK | Some EPA staff members are inclined to indicate that EPA may veto a project if they don't get the avoidance or mitigation they want. This usually happens at pre-application meetings or other informal discussions. We know that it is very unlikely that these projects will be vetoed but the applicants don't know this. EPA staff should refrain from threatening a 404(c) unless they have assurance that management would support such a position. |
| SPN | |

| District | Any problems with the threat or use of 404(c)? If so, what are some of the major problems with, or misuse of, the 404(c) procedures? |
|---|---|
| SWA | We have had an occassional threatened 404(c) veto but none during CY 93. |
| SWF | No problems with the threat or use of 404(c) in this district. We have generally maintained a productive working relationship with EPA in this district. |
| SWG | ----- |
| SWL | Yes. It should be used in some cases. For instance, in the AIDA procedure. In some cases there would be a more useful product if (c) were used to deny 404 for some parts of the area, but EPA won't do that. |
| SWT | We have not had 404(c) problems that I'm aware of. That is not to say that EPA has not requested denial of permit in some cases. They did several times during CY 93 but through work with the applicant, EPA's primary concerns were generally alleviated. |

## SUMMARY OF EACH OF THE 404(c) VETO ACTIONS

Question: Please provide for the record a summary description of each of the 404(c) veto actions. Be sure to include descriptions of the proposed mitigation packages that would have accompanied the permit.

Answer: Attached are summaries of the 11 Section 404(c) actions completed by EPA, including information regarding proposed compensatory mitigation to offset project impacts.

### Coastal Florida/North Miami Landfill
**January 19, 1981**

**Summary**: In 1981, EPA completed a review of a proposed Section 404 permit which would have authorized the discharge of solid waste (garbage) into 103 acres of wetlands (including mangroves) and other waters in North Miami, Florida. The purpose of the proposed project was to operate a landfill for the disposal of solid waste and to construct a public recreational facility. EPA's action to prohibit any discharge into these waters was based on the finding that the discharge would have an unacceptable adverse effect on shellfish and fishery areas, wildlife, and recreational areas.

**Background/404(c) Process**: In 1976, the Corps issued a Section 404 permit to the City of Miami for the purposes of constructing a public recreational facility adjacent to Biscayne Bay. The Corps permit allowed for 103 acres of wetlands fill, but did not reference the use of solid waste as fill material. EPA did not oppose this project. However, in 1977, the Corps announced proposed modifications to the permit which would allow the disposal of solid waste (garbage) into wetlands and other waters. EPA opposed this proposed modification and attempted to resolve concerns at the field level. In 1980, after having been unable to resolve concerns at the field level, the case was elevated for Washington-level review pursuant to Section 404(q). Here again, discussions between EPA and the Corps failed to resolve the matter. Subsequently, on June 25, 1980, EPA initiated the 404(c) process and provided public notice and hearing of the proposed action. When these actions failed to resolve EPA's concerns with the proposed project, the Regional Administrator recommended to EPA Headquarters that the project be prohibited pursuant to Section 404(c). Subsequent to the Region's recommendation, EPA Headquarters provided the Mayor of North Miami and the Corps with an additional opportunity to consult on this project. These efforts failed to resolve outstanding concerns. Accordingly, a Section 404(c) Final Determination placed restrictions on using the site for a landfill.

**Adverse Human Health and Environmental Impacts**: At the time of EPA's Section 404(c) action, approximately 60 acres of wetlands had already been filled with solid waste and several lakes had been excavated through the solid waste and into the aquifer. EPA found that the placement of solid waste on the site had and would continue to result in significant leaching of contaminants into lakes, wetlands, the water table which connects to Biscayne Bay, and ultimately the Bay itself. EPA also found that the proposed discharge of additional solid waste would exacerbate this problem. Specifically, adverse environmental effects from solid waste discharges, which were expected to continue and worsen under the proposed permit, include:

- the release of toxic leachate contamination from 31 man-made organic compounds including ammonia, solvents, plasticizers, lubricating fluids, and compounds linked to pharmaceutical wastes into adjacent wetlands and the water table connecting to Biscayne Bay;
- the release of five priority pollutants known or strongly suspected of having toxic effects on humans and other animals;
- the loss of 103 acres of wetlands that serve as essential nursery grounds for marine fish and invertebrates which play a critical role in the food web which supports important recreational and commercial fisheries; and
- possible adverse effects on Biscayne Bay food resources (forage fish and seagrasses) for two endangered species (Eastern brown pelican and West Indian Manatee).

**Proposed Mitigation:** The original Section 404 permit, issued in 1976, contained the preservation of 8.2 acres of mangroves and the creation of three shallow, tidal ponds as mitigative measures, as well as the enhancement and preservation of 138 acres of mangroves. As noted above, EPA did not oppose the issuance of this permit. However, the subsequent modification of the permit would have allowed for the destruction of the 8.2 acre mangrove preserve and the three tidal ponds, as well as the disposal of waste into wetlands. According to the Corps public notice for this modification, no new mitigation was proposed to offset these additional impacts.

**Subsequent Actions:** While EPA's action prohibited some activities, it did allow for the placement of clean fill to close the landfill. In 1995, EPA reviewed plans by the City to close the landfill and possibly construct an amphitheater on the site. EPA found that the City's plans were consistent with the Section 404(c) which subsequently facilitated closure of the landfill.

### Narragansett Bay Watershed, Rhode Island/Big River Dam and Reservoir
**March 1, 1990**

**Summary**: In 1990, EPA completed a review of a proposal by the Corps and the State of Rhode Island to create a water supply impoundment in Kent County, Rhode Island. The proposed dam and water supply reservoir would have resulted in the loss of 575 acres of exceptional and diverse wetlands and other waters that provide important wildlife habitat and recreational opportunities. EPA determined that the proposed reservoir would also adversely impact valuable aquatic systems associated with surface and groundwater flow from the subject area and could exacerbate existing downstream water quality problems. Moreover, EPA determined that there were less environmentally damaging practicable alternatives to address the projected water supply needs in the Greater Providence area. In light of these concerns, EPA prohibited construction of a reservoir at the site based on the finding that the proposed project would result in unacceptable adverse effects on wildlife habitat and recreation areas.

**Background/404(c) Process:** In the early 1980's, EPA informed the Corps of concerns with a proposal by the State of Rhode Island to construct a reservoir on Big River. As environmental review of the project continued in the following years, EPA remained concerned with the proposed project, ultimately identifying it as a potential candidate for a Section 404(c) action and urging the State to abandon the project. Despite concerns with the proposal and efforts by EPA to resolve these concerns, the Corps continued to support the proposed reservoir. In August, 1988, EPA initiated a Section 404(c) action and provided the State and the Corps with an opportunity for consultation. Neither the Corps nor the State chose to consult with EPA. EPA also provided public notice and conducted a public hearing on the proposed Section 404(c) action. An overwhelming majority of the 219 public comments received opposed the reservoir. Additionally, of the 37 people who spoke at the public hearing, 33 expressed opposition to the reservoir. In October, 1989, the Regional Administrator recommended to EPA Headquarters that the project be prohibited pursuant to Section 404(c). EPA Headquarters offered the Corps and the State an additional opportunity for consultation on the proposed project, including the opportunity to present information on any effort to take corrective action to lessen environmental impacts from the proposed project. Consultation again failed to address concerns with the proposal and on March 1, 1990, EPA issued a Final Determination which prohibited construction of the proposed reservoir.

**Adverse Human Health and Environmental Impacts:** EPA vetoed the proposed project on the basis that it would have resulted in:

- the loss of 575 acres of wetlands, inundation of 17 miles of free flowing streams, and indirect impacts to an additional 700 to 800 acres of wetlands;
- the destruction of diverse and productive wetland and free flowing habitat that provides critical ecological support to wildlife:
- adverse impacts to 144 species of fish, birds, reptiles, amphibians, and mammals;
- adverse impacts to aquatic resources/water quality outside the impoundment area by impairing groundwater movement and reducing the amount of water discharged into the Pawtuxet River; and
- the loss of a valuable recreation area which provides excellent opportunities for fishing, hunting, canoeing, birdwatching, and other outdoor activities.

**Proposed Mitigation:** The State did not submit a mitigation plan with its permit application. The Corps, in its 1981 EIS, proposed mitigation measures which included the management of forests adjacent to the reservoir, reclamation of a mined area, and construction of birdhouses. To mitigate for wetlands losses, the Corps proposed the construction of "subimpoundments" in the upper reaches of the reservoir. If fully successful, these subimpoundments would have contained approximately 90 acres of wetlands. Notwithstanding the finding that the adverse effects of the proposed project were avoidable due to the availability of less environmentally damaging alternatives, EPA found that this mitigation proposal would not measurably offset the loss of 575 acres of diverse, natural wetlands, nor would it even attempt to address the many secondary impacts the project would cause.

**Subsequent Actions**: As a result of EPA's action, the applicant later determined that there were non-structural, cost-effective alternatives available to meet the water supply demand.

### Jehossee Island, South Carolina/Hunting Impoundments
### April 5, 1985

**Summary**: In 1985, EPA completed a review of a proposal to impound 900 acres of intertidal coastal marsh in two separate impoundments to facilitate duck hunting and aquaculture in Charleston County, South Carolina. EPA vetoed the proposed project based on the conclusion that it would have resulted in unacceptable adverse effects on fishery areas and recreational areas. In reviewing the proposed project, EPA determined that the conversion of 900 acres of productive, intertidal coastal marsh to a stagnant cut-off impoundment would have resulted in the loss of valuable spawning, nursery, and foraging habitat for species including the blue crab, shrimp; and numerous commercial fish species such as red drum, crappie, and bass. Additionally, the loss of these wetlands would have eliminated important water purification functions such as the ability to assimilate fecal coliform bacteria, pesticides, nitrogen, and phosphorus.

**Background/404(c) Process**: In 1982, Maybank sought a Section 404 permit for the construction of an impoundment to facilitate duck hunting and aquaculture in Charleston County, approximately 30 miles southwest of Charleston, South Carolina. At that time, EPA notified the Corps of concerns with the proposed project. In 1984, the Corps notified EPA of their intent to issue a Section 404 permit for the proposed project. Consistent with earlier comment letters to the Corps on this project, EPA requested Washington-level review of this permit decision pursuant to Section 404(q). This review process failed to address EPA's concerns and in April, 1984, EPA initiated a Section 404(c) action on the proposed project. EPA subsequently provided public notice of the proposed Section 404(c) action and provided Maybank with an opportunity for consultation. In addition, a public hearing was held in Charleston, South Carolina. During this time, both EPA Region IV and Headquarters met with Maybank in an attempt to resolve the dispute by discussing potential alternatives to the proposed project, including an alternative impoundment configuration. Maybank, however, rejected EPA's suggested alternative. In January, 1985, the Regional Administrator recommended to EPA Headquarters that the proposed project be prohibited pursuant to Section 404(c). EPA Headquarters provided Maybank and the Corps with an additional opportunity for consultation on the proposed Section 404(c) action. This consultation did not resolve concerns with the project, and, on April 5, 1985, EPA issued the Final Determination restricting the construction of impoundments on the site.

**Adverse Human Health and Environmental Impacts**: EPA vetoed the proposed project on the basis that it would have resulted in:

☐ the conversion of 900 acres of open, productive, intertidal coastal marsh to a stagnant, cut-off impoundment;

☐ the loss of valuable spawning, nursery, and foraging habitat for species including blue crab, shrimp, and numerous commercial fish species such as red drum, crappie, and bass; and

☐ the loss of wetlands that assimilate fecal coliform, pesticides, nitrogen and phosphorus. (EPA found that a significant source of pollutants such as fecal coliforms to the estuary was water released from impoundments similar to that being proposed by Maybank.)

**Proposed Mitigation**: As originally proposed, this project would have impacted approximately 2000 acres of wetlands. In response to concerns with this proposal, Maybank submitted a modified proposal which would impact 900 acres of wetlands. In a 1984 environmental assessment of the project, the Corps found that the reduction in size from the originally proposed project is an appropriate step to minimize the potential adverse impacts of the project on the aquatic ecosystem. There was no proposal to offset the 900 acres of impacts to coastal marsh from the proposed project through mitigation measures such as wetlands enhancement or creation.

**Subsequent Actions**: The South Carolina Supreme Court upheld a decision by the South Carolina Coastal Commission barring additional conversions of this type because of concerns regarding adverse impacts to water quality in State waters.

### Lake Alma, Georgia/Dam and Reservoir
### December 16, 1988

**Summary**: In 1988, EPA completed a lengthy review of a proposal to create a recreational impoundment near Alma, Georgia. The proposed dam and impoundment on Hurricane Creek would have resulted in the loss of nearly 1,000 acres of bottomland hardwood wetlands that provide extremely important habitat for a diverse assemblage of wildlife species. Habitat fragmentation due to the dam would have had a profound and irreversible impact on aquatic and terrestrial species. EPA also found that the proposed action would exacerbate cumulative losses of bottomland hardwood wetlands in the southeastern United States. EPA's action was based on the finding that the proposed project would result in an unacceptable adverse effect on wildlife.

**Background/Section 404(c) Process**: EPA's involvement with this proposal to create a recreational impoundment near Alma, Georgia, began in the 1970s, when EPA rated the environmental impact statement for the proposed project environmentally unacceptable, based on impacts to wetlands and water quality, and referred the project to the Council on Environmental Quality (CEQ). CEQ concurred with EPA's finding that the project would result in serious environmental degradation. Despite concerns with the project, however, in 1980, the Corps notified EPA that they intended to issue a Section 404 permit for the proposed activity. EPA subsequently attempted to address our concerns with the permit decision by requesting Washington-level review pursuant to Section 404(q). This review process failed to address EPA concerns with the proposed project. Corps action on the Section 404 permit, however, was delayed by litigation and additional study of the proposal. In 1988, the Corps notified EPA of its intent to issue a Section 404 permit for the project. In June, 1988, EPA Region IV initiated a Section 404(c) action on the proposed project. Subsequently, in accordance with Section 404(c) regulations, EPA provided public notice of the proposed action and held a public hearing in Alma, Georgia. In response to the public notice, EPA received over 2000 letters and almost 3500 signatures in petitions supporting EPA's action. After reviewing comments submitted by the applicant, the Corps, and other public and private parties, EPA Region IV recommended to EPA Headquarters that the proposed project be prohibited pursuant to Section 404(c). EPA Headquarters subsequently provided an additional opportunity for consultation to the applicant and the Corps. After meeting with the applicant and responding to issues raised by the State, EPA Headquarters determined that the project was not in compliance with CWA Section 404 and issued a final determination on December 16, 1988.

**Adverse Human Health and Environmental Impacts**: EPA identified 48 mammal species, 106 fish species, 57 reptile species, 38 amphibian species, and 159 bird species that typically occur in the area of the proposed Lake Alma project. EPA prohibited the proposed project on the basis that it would have resulted in:

- the loss of almost 1,000 acres of bottomland hardwood wetlands that provide extremely important and diverse habitat values for an assemblage of wildlife species;
- habitat fragmentation due to the dam structure that would have a profound and irreversible impact on aquatic and terrestrial species which currently use the area; and
- exacerbated cumulative losses of forested wetlands in southeastern U.S. (One assessment of changes in bottomland hardwood systems in the southeast estimates that net losses in the region between 1960 and 1975 totaled 6.4 million acres, with the state of Georgia losing more acres of bottomland hardwood than any other state.)

**Proposed Mitigation**: The applicant proposed to mitigate for wetlands impacts by creating 14 impoundments on Hurricane Creek and unnamed tributaries of Hurricane Creek. These impoundments would have been managed primarily for the benefit of select duck species. EPA found that project-associated impacts to other important wildlife species such as songbirds, mammals, and amphibians, were not addressed by the mitigation plan. As such, the mitigation plan did not adequately account for wetland wildlife values which would be lost by construction of the proposed recreational lake. (U.S. FWS found that the proposed mitigation plan would account for only 13 percent of the wildlife habitat values lost as a result of the proposed project.)

### East Everglades, Florida/Henry Rem Estates
### June 15, 1988

**Summary**: In 1988, EPA completed the review of a proposal to "rockplow" and convert wetlands on three separately owned properties totaling 432 acres in East Everglades, Dade County, Florida. EPA's prohibition of the proposed rockplowing was based on the determination that these projects would result in the irreversible loss of wetland habitat that is critical to the wildlife of the Everglades National Park - East Everglades wetlands ecosystem. This potential loss, when combined with cumulative losses of East Everglades wetlands, would result in unacceptable adverse effects on fish and wildlife habitat. Furthermore, the conversion of these wetlands would result in adverse impacts to groundwater and surface water by eliminating the nutrient and pollutant assimilation capacities of the native wetlands vegetation and introducing nutrients, pesticides, and herbicides from subsequent use of the site.

**Background/Section 404(c) Process:** Rockplowing is a process used to prepare land for farming where there is surface rock. In this process, a bulldozer is used to drag a multitoothed ripping blade to break up and crush surface rock. In this case, rockplowing would be used to break up and crush the limestone substrate of the wetlands and redistribute the crushed limestone so as to provide a smooth surface for farming. The process would also have the effect of eliminating wetlands vegetation on the site.

This Section 404(c) action concerns three separately owned sites in the East Everglades. In 1987, after the Corps announced its intention to issue a Section 404 permit authorizing rockplowing on one of the three subject properties, EPA attempted to address concerns with the proposed permit decision by requesting Washington-level review pursuant to Section 404(q). The review process did not resolve EPA's concerns with the proposed project and the Corps subsequently announced its intention to issue a permit for the first of the three sites. EPA concluded that the three sites are ecologically similar portions of the East Everglades wetlands complex and that each was vulnerable to the adverse effects of planned rockplowing. Accordingly, in April, 1987, EPA initiated a Section 404(c) action concerning all three proposed rockplowing projects, provided public notice of the proposed action, and held a public hearing in Homestead, Florida. When these actions failed to resolve concerns with the proposed projects, EPA Region IV recommended to EPA Headquarters that the projects be prohibited pursuant to Section 404(c). EPA Headquarters subsequently provided the Corps and the applicants with an additional opportunity for consultation on the recommended 404(c) action. In response to the invitation for consultation, the Corps stated they did not intend to pursue corrective action on the subject permit decision. Consultation with the property owners also failed address concerns with the proposed projects. On June 15, 1988, EPA issued a Final Determination prohibiting rockplowing of the three sites.

**Adverse Human Health and Environmental Impacts:** The wetlands of the Everglades help purify the Biscayne Aquifer -- the sole source of drinking water for South Florida's 3 million people. EPA identified 16 species of fish, 15 species of amphibians, 27 species of reptiles (including the threatened American alligator), 18 species of mammals (including the endangered Floridan Panther), and 77 species of birds (including the endangered wood stork) which typically occur on the subject properties. The proposed project would have resulted in:

☐ conversion of 432 acres of wetlands in the East Everglades;

☐ significant loss of fish and wildlife habitat (including habitat for the Florida Panther, one of the most endangered species on earth); and

☐ adverse impacts to groundwater and surface water quality by introducing nutrients, pesticides, and herbicides from agricultural activities.

**Proposed Mitigation:** The applicants proposed to mitigate for impacts to 372 acres of wetlands on two of the three sites by preserving approximately 500 acres of wetlands.

### Mobile Bay, Alabama/Norden Company
### June 15, 1984

**Summary:** In 1984, EPA completed a four year review of a proposal by M.A. Norden Company, Inc. to fill 25 acres of estuarine wetlands in Mobile, Alabama, for the purpose of building a waste recycling and storage facility. EPA vetoed the proposed project based on the finding that the loss of 25 acres of forested and emergent wetlands would have resulted in unacceptable adverse effects to shellfish beds, fishery areas, and wildlife areas, including habitat for the endangered American alligator. In addition, the proposed action would have exacerbated cumulative wetlands losses in the Mobile Bay area; and would have resulted in increased pollutants, including heavy metals, pesticides, nutrients, and organic wastes flowing into the Mobile River and Mobile Bay. Finally, EPA concluded that less environmentally damaging practicable alternatives to the proposed project were available. In 1994, EPA modified the Section 404(c) action at the landowner's request to pursue a revised project on the site.

**Background/Section 404(c) Process:** The M.A. Norden Company applied for a permit in 1980 to fill 65 acres of estuarine wetlands adjacent to Mobile Bay for the purpose of constructing a waste recycling and storage facility. EPA, and other resource agencies, coordinated with the Corps of Engineers and the applicant during a three year process in an effort to avoid the loss of this valuable wetland system by seeking to identify alternative locations for the project. Being unable to resolve the significant concerns regarding the impacts associated with the proposed project, EPA Region IV initiated proceedings under the Agency's 404(c) regulations. In January, 1984, after a detailed review of the project that included public notice and hearing, EPA Region IV recommended that EPA Headquarters veto the proposed project. EPA Headquarters provided the Corps and the applicant with another opportunity for consultation on the recommended Section 404(c) action. As a result of consultation with the applicant, a Special

Task Force was formed by EPA to examine the feasibility of alternatives to the proposed project. On June 15, 1984, after considering the findings of the Special Task Force (the Task Force Final Report concluded that practicable alternatives were available to satisfy the project purpose while avoiding wetlands impacts) and determining that concerns with the proposed project remained unaddressed, EPA issued a Final Determination prohibiting the use of the site for a waste recovery/storage facility.

**Adverse Human Health and Environmental Impacts**: The subject wetlands provide valuable habitat for a diverse community of mammal, amphibian, reptile, and bird species, including egrets, hawks, and herons. Additionally, the endangered American alligator has been observed in the area. EPA found that the proposed waste storage facility would have resulted in:

☐ loss of 25 acres of productive forested and emergent wetlands that contribute organic material to the fish and shellfish communities of the Mobile Bay estuary, provide valuable habitat for wildlife, and act as a pollutant filtering mechanism for adjacent waters;

☐ increased pollutants, including heavy metals, pesticides, nutrients, and organic wastes flowing into Mobile River and Mobile Bay; and

☐ loss of one of the last remaining wetland areas in the Mobile area.

**Proposed Mitigation**: The draft Corps permit for the project proposed the restoration of approximately four acres of wetlands and the implementation of a stormwater retention plan on the Norden site as mitigation measures.

**Subsequent Actions**: In October 1992, M.A. Norden Company requested that EPA modify its 1984 Final Determination to enable it to apply for a Section 404 permit to convert 1.5 acres of wetlands to construct a road across the site to access adjacent uplands. EPA subsequently modified the Final Determination to allow Norden Company to obtain a Section 404 permit to construct the proposed road.

### South Platte River, Colorado/Two Forks Dam and Reservoir
### November 23, 1990

**Summary**: In 1990, EPA completed a three year review of a proposal by the Denver Water Board to build a dam and water supply reservoir in the South Platte River in Jefferson and Douglas Counties, Colorado. This proposal would have adversely affected 30.1 miles of free-flowing river, portions of which are designated by the State of Colorado as "gold medal" trout water, 281 acres of riffle and pool complexes, and approximately 300 acres of riparian wetlands. EPA opposed the proposed project on the basis that it would have destroyed an extraordinarily valuable aquatic ecosystem that provides high quality fishery habitat. Additionally, EPA found that the subject resource provides significant recreation opportunities (e.g., fishing, kayaking) year round within close commuting distance from the City of Denver. EPA also found that these resource losses were avoidable because practicable, less damaging alternatives were available to meet the long-term water supply needs of the Denver metropolitan area.

**Background/Section 404(c) Process**: The water storage potential of the proposed Two Forks dam site had been the subject of several studies dating back to the 1970s. In 1987, the Corps of Engineers (Corps) issued a Draft Environmental Impact Statement (DEIS) and a Section 404 public notice for the proposed Two Forks dam and reservoir project. Later that year, EPA provided comments on the DEIS, giving the document an adverse rating (Environmentally Unsatisfactory -- Inadequate Information). Subsequently, the Region corresponded and met several times with the Corps and the applicants to discuss concerns with the proposed project. Despite EPA's concerns with the proposed dam and impoundment, in March, 1989, the Corps provided a Notice of Intent (NOI) to issue the Section 404 permit for the project. Following the Corps' NOI, EPA announced that it would commence the Section 404(c) process. Subsequently, EPA held extensive meetings with the applicants, their consultants, public officials, and representatives of the environmental community. In August, 1989, the Region issued public notice of the proposed Section 404(c) action and conducted public hearings in Denver, Colorado, and Grand Island, Nebraska. In March 1990, EPA Region VIII recommended that EPA Headquarters prohibit the proposed project pursuant to Section 404(c). (By the time the Region made its recommendation to Headquarters, EPA had received approximately 11,000 written comments on the proposed project, most supporting EPA's action.) EPA Headquarters offered the applicants and the Corps an additional opportunity for consultation on the proposed action. The Corps responded to the offer of consultation by stating that they had no further comment on the recommended Section 404(c) action. EPA Headquarters did consult with the applicants on several occasions and discussed alternatives to the proposed project. On November 23, 1990, EPA vetoed the proposed reservoir on the South Platte River.

**Adverse Human Health and Environmental Impacts**: The fishery resource that would be impacted by the project is one of the most productive in the State of Colorado, portions of which are designated as a "Gold Medal Trout Water" by the Colorado Wildlife Commission. The U.S. Fish and Wildlife Service has designated a portion of the area as "Resource Category 1," which is defined as "unique and irreplaceable" on a national basis. The U.S. Forest Service concluded that the area has "outstanding and remarkable recreational and fishery values." These values are enhanced by the close proximity of the site to the major metropolitan areas of Denver and Colorado Springs. Construction and operation of the Two Forks dam and reservoir would have resulted in the:

☐ loss of extraordinary aquatic resource and an outstanding recreational fishery;

☐ inundation of over 30 miles of the South Platte River, including approximately 14 miles of State designated "Gold Medal" trout stream;

☐ destruction of "habitat that is unique and irreplaceable on a national basis" (U.S. FWS); and

☐ inundation of South Platte River areas currently receiving intense recreational use.

**Proposed Mitigation**: The mitigation proposed by the applicant included restoration of 310 acres of riparian lands; fencing of 700 acres of wetlands to restrict livestock access; enhancement of instream habitat in the South Platte drainage and in the Blue River; annual fish stocking at the proposed reservoir; improvement of public access to other fishing areas; and the enhancement of recreation facilities in the area. Notwithstanding the finding that the adverse effects of the proposed project are unacceptable in light of the availability of practicable, less damaging alternatives, EPA review of the proposed mitigation determined that it would not compensate for the loss of a unique and irreplaceable, large, free-flowing river system with remarkable fishery and recreational values within a single location easily accessible to metropolitan Denver.

### Attleboro Mall, Massachusetts

**May 13, 1986**

**Summary**: In 1986, EPA completed a review of a proposal by Pyramid Companies to construct a shopping mall and appurtenant facilities in Sweeden's Swamp in Attleboro, Massachusetts. The proposed shopping mall would have destroyed 32 acres of red maple forested swamp and altered an additional 13 acres of forested swamp. EPA found that the proposed project would have resulted in the loss of diverse habitat for a variety of wildlife, particularly species of birds, small mammals, and amphibians. EPA prohibited the use of the site for purposes of constructing the proposed shopping mall on the basis that unacceptable adverse effects to wildlife would result.

**Background/Section 404(c) Process**: Pyramid Companies applied for a Section 404 permit for the proposed shopping mall project in 1984. At that time, EPA wrote to the Corps expressing concern over the impacts of the proposal and emphasizing the need for an appropriate analysis of project alternatives. In 1985, the Corps prepared to issue a permit for the proposed project. In making the permit decision, the Corps gave great weight to the applicant's proposal to create 36 acres of wetlands to compensate for those lost as a result of the project and concluded that the project should proceed, notwithstanding the questions concerning the availability of upland alternatives. EPA was concerned that this decision deviated from longstanding Section 404 policy which requires that wetlands impacts be avoided when the applicant has other practicable alternatives available. Based on this concern, as well as concerns with the potential adverse environmental effects of the proposal, EPA initiated a Section 404(c) action. Subsequently, EPA provided the Corps and the applicant with an opportunity to consult and held a public hearing to solicit comments on the proposed action. When discussions with the Corps and the applicant did not resolve concerns with the proposed project, EPA Region I recommended to EPA Headquarters that the proposed project be prohibited pursuant to Section 404(c). EPA Headquarters subsequently held a series of meetings with the applicant and the Corps to discuss the proposed Section 404(c) action. EPA also met with members of the U.S. Congress; state and local representatives; and representatives of environmental and community interest groups to discuss the proposed action. These meetings, however, failed to resolve concerns with the proposed project and EPA prohibited the use of the site for purposes of constructing the proposed shopping mall.

**Adverse Human Health and Environmental Impacts**: The proposed shopping mall in Attleboro, Massachusetts, would have resulted in:

☐ destruction and alteration of 45 acres of New England red maple forested swamp; and

☐ loss of diverse habitat for a variety of wildlife, particularly species of birds, small mammals, and amphibians.

**Proposed Mitigation**: Pyramid Companies proposed to compensate for wetlands losses from the proposed project by creating 36 acres of artificial marsh wetlands, and offered to post a $1 million performance bond on the man-made wetland's construction. As noted above, a primary issue in this Section 404(c) action was the concern that, contrary to longstanding Section 404 policy, the Corps was preparing to issue a permit for the proposed project, despite the availability of a feasible alternative site. Furthermore, while EPA encourages mitigation efforts when there are no practicable alternatives, the Agency found that a wetland creation project of the size and type proposed was not certain to adequately compensate for the loss of the existing system.

**Subsequent Actions**: The proposed shopping mall project was later constructed at a nearby site.

### Hackensack Meadowlands, New Jersey/Russo Development Corporation
### March 21, 1988

**Summary**: In 1988, after a lengthy public process, EPA completed its review of a proposal by the Russo Development Corporation (RDC) to receive an after-the-fact permit for the unauthorized destruction of almost 53 acres of wetlands in the Hackensack Meadowlands (New Jersey) on which a warehouse complex had been constructed. RDC was also seeking approval to fill additional wetlands to complete the project. EPA's action was based on a finding that the project would have unacceptable adverse effects, both individually and cumulatively, on wildlife in the Meadowlands, and reduce water quality in adjacent areas due to increased sediment loading. EPA also found that the mitigation proposed by RDC would not adequately replace those wildlife values that had been and were anticipated to be lost. In 1995, based on an improved mitigation proposal by RDC, EPA modified this Section 404(c) action to allow RDC to obtain a permit for the wetlands that had been previously destroyed and allow the constructed project to remain in place.

**Background/Section 404(c) Process**: In 1981, RDC filled 44 acres of wetlands without a permit and constructed six warehouses in the Hackensack Meadowlands. RDC later filled an additional 8.5 acres of wetlands to build additional warehouses. EPA first learned of these activities in 1985 when the Corps began investigating the unauthorized fill. Later that year, the Corps issued public notice of a proposal to authorize the fill and allow additional fill in adjacent wetlands. In response to the public notice, EPA indicated that they would have recommended denial of the project had the project proposal been submitted prior to filling of the wetlands. EPA indicated, however, that if appropriate mitigation was provided, they would not recommend denial. After a lengthy attempt to develop an adequate mitigation plan failed, EPA initiated the Section 404(c) action in May 1987, and provided the Corps and the applicant with an opportunity for consultation pursuant to Section 404(c) regulations and held a public hearing. After this public process, EPA Region II submitted a recommended determination to EPA Headquarters based on a finding that the unauthorized fill and proposed fill has/will result in unacceptable adverse effects to wildlife. EPA Headquarters provided RDC and the Corps with additional opportunity for consultation consistent with Section 404(c) regulations. The consultation process did not resolve EPA concerns and a final determination under Section 404(c) was issued.

**Adverse Human Health and Environmental Impacts**: EPA identified 119 species of birds, 19 species of mammals, 7 species of reptiles, and 7 species of amphibians projected to have occurred on the site. These species include 7 state endangered bird species and three state threatened species, in addition to two state threatened species that had been observed on the site. Of the endangered species, the pied-billed grebe, northern harrier, Cooper's hawk, short-eared owl, sedge wren, and the vesper sparrow are in eminent danger due to habitat losses. EPA found that this unauthorized warehouse project resulted in:

☐ the loss of almost 53 acres of wetlands that lie within the critically important Atlantic flyway which is particularly important to black duck, mallard, American woodcock, and nine other threatened or endangered species;

☐ a reduction in water quality in adjacent areas due to increased sediment loading; and

☐ exacerbated cumulative wetland losses in the Hackensack Meadowlands.

**Proposed Mitigation**: RDC proposed to compensate for the loss of 53 acres of wetlands by preserving a 23 acre wetland area and by enhancing 18.1 acres of wetlands. EPA found that the mitigation plan as proposed did not adequately address the site specific or cumulative wetlands losses caused by the warehouse project. However, after reviewing a later mitigation proposal by RDC, EPA coordinated with the Corps and this resulted in a permit being issued for the warehouse project in 1996.

### Coastal Louisiana/Bayou aux Carpes
### October 16, 1985

**Summary**: In 1985, EPA completed a lengthy review of a proposed Corps flood control and land reclamation project that would have resulted in the loss or degradation of 3,000 acres of Louisiana's coastal wetlands. The project was designed to provide flood control and land reclamation, which would be accomplished by draining the wetlands. Although partially constructed, project completion would have closed the remaining tidal connection to the site to facilitate the installation of a pumping station. EPA concluded that the proposed project would have resulted in unacceptable adverse effects on shellfish beds, fishery areas (including spawning and breeding areas), and wildlife and recreational areas. In 1992, this 404(c) action was amended to allow Shell Oil to perform needed work on a below ground gas pipeline.

**Background/Section 404(c) Process**: This project has a long and controversial history dating back to 1964, when the Corps first approved a flood control and land reclamation project at Bayou aux Carpes. Although the project was partially complete, construction was halted in 1974 when the Corps initiated a Section 404 review of the project. Based on this review, the Corps recommended that the project be completed. EPA raised concerns to the Corps stating that the project would have unacceptable adverse impacts on wildlife and recreational areas. In 1976, the Corps recommended that the original project be modified so as to retain the flood control benefits without completion of the levees and subsequent pumping of the site. On the basis of the earlier Agency concerns, EPA initiated a Section 404(c) action in 1984. EPA subsequently provided public notice of the proposed Section 404(c) action and conducted a public hearing in Gretna, Louisiana. After consideration of public comments, EPA Region VI recommended to EPA Headquarters that the project be restricted pursuant to Section 404(c). EPA Headquarters provided the property owners and the Corps with additional opportunity to consult on EPA's proposed action. However, this consultation did not resolve EPA's concerns and a final determination was issued under Section 404(c).

**Adverse Human Health and Environmental Impacts**: The Bayou aux Carpes site contains a mosaic of bottomland hardwoods, wooded swamps, scrub-shrub wetlands, freshwater marshes, and open waterways. As reported by the Department of Commerce, Louisiana is the third ranking State in fisheries employment and the State's estuarine system produces almost 30 percent of the nation's fishery harvest. Completion of the project would eventually eliminate the swamp marsh production that constitutes a necessary component of the estuarine food web that supports such fisheries. Completion of the levee project would have also:

☐ resulted in the loss/degradation of 3,000 acres of coastal wetlands which provides nursery habitat for many recreational/commercial fish species including blue crab, shrimp, bass, catfish and crawfish;

☐ adversely affected the habitat for a diversity of wildlife including the American alligator, which is threatened in State of Louisiana, the osprey, the wood duck, and commercially important furbearers;

☐ resulted in increased pollutants and heavy metals, including copper, iron, and lead, entering adjacent waters including those of Barataria Bay; and

☐ eliminated recreation opportunities in the form of hunting and fishing from the site.

**Proposed Mitigation**: Corrective measures proposed to minimize the adverse effects of the proposed project included the relocation of the proposed pumping station and the purchase of a portion of the subject site by the Park Service. EPA found that this proposal would not materially reduce the significant adverse effects of the project, even if the Park Service were in a position to implement it. (In any case, the Park Service indicated that it did not have an interest in acquiring the subject property at that time.)

**Subsequent Actions**: In 1992, this 404(c) action was amended to allow the discharge of dredged or fill material for the purpose of performing necessary work to relocate a below ground gas pipeline owned by Shell Oil.

### Chesapeake Bay Watershed, Virginia/Ware Creek Dam and Reservoir
### July 10, 1989

**Summary**: In 1989, EPA completed a review of a proposed Section 404 permit which would have authorized the construction of a dam and impoundment on Ware Creek for the purpose of establishing a local water supply for James City County, Virginia. The proposed project would have resulted in the loss of 425 acres of diverse wetland habitat in the Chesapeake Bay watershed. EPA's Section 404(c) action was based on the finding that the proposed project would have resulted in unacceptable adverse effects on wildlife and that there were practicable, less environmentally damaging alternatives for the purpose of providing water to the County. EPA fully supports a regional water supply project to address the legitimate water supply needs of southeastern Virginia and is working with the Regional Raw Water Study Group (RRWSG) in an effort to identify a regional water supply project which effectively protects the environment.

**Background/Section 404(c) Process**: EPA has strongly endorsed a regional water supply project for Virginia's lower peninsula. In 1981, during the initial planning stages of the proposed project, EPA raised concerns about potential adverse environmental impacts from the proposed Ware Creek reservoir. Faced with a trend of locally-oriented and uncoordinated proposals for water supply impoundments, all with potentially serious adverse environmental impacts, EPA voiced a need for comprehensive water supply projects to address regional water demands. In fact, the Section 404(c) action on Ware Creek was based solely on the applicant's proposal as a local water supply project. Since 1987, the RRWSG, consisting of the City of Newport News, City of Williamsburg, and York County, has been evaluating regional alternatives to meet long-term water supply needs of southeastern Virginia. James City County is an informal member of the RRWSG and would receive water from a new reservoir. EPA Region III has participated in the RRWSG since 1991.

The Corps issued a Notice of Intent to issue a permit for the proposed Ware Creek Reservoir in July 1988. Based on concerns regarding unacceptable adverse impacts to wildlife, EPA initiated a Section 404(c) action, provided public notice, and held a public hearing. After considering the comments of federal, state, regional, and local agencies; public interest groups, affected property owners and the general public, EPA Region III concluded that the project would have unacceptable adverse environmental effects and recommended to EPA Headquarters that the project be prohibited. EPA Headquarters subsequently provided the Corps and the applicant with another opportunity to consult on the proposed action and conducted a site visit. The additional consultation did not resolve EPA concerns and issued a final determination under Section 404(c).

**Adverse Human Health and Environmental Impacts**: EPA identified 23 species of fish, 20 species of amphibians and reptiles, 108 species of birds, and 22 species of mammals that typically occur in the wetlands and aquatic resources of the Ware Creek system. EPA vetoed the proposed project on the basis that it would have resulted in:

☐ the loss of a 425 acre mosaic of high quality aquatic resources in the Chesapeake Bay watershed, thereby exacerbating significant historic declines in the watershed's wetlands;

☐ the loss of critical commercial and recreational fish spawning and nursery areas, black duck habitat, and a significant Great Blue Heron rookery; and

☐ the loss of wildlife areas considered by the U.S. Fish and Wildlife Service to be unique and irreplaceable on a regional basis.

**Proposed Mitigation**: The applicant proposed to mitigate for impacts to aquatic resources by creating 130 acres of wetlands; enhancing and preserving approximately 200 acres of wetlands; maintaining a buffer zones around the proposed reservoir and tributaries; and creating Great Blue Heron nesting sites in the Ware Creek watershed. Additionally, the applicant proposed to create 37 acres of wetlands and to remove an existing dam to facilitate reconnection of impounded wetlands in the Yarmouth Creek watershed, while preserving extensive tracts of existing wetlands and uplands in the James River watershed. EPA concluded that the mitigation proposal would not adequately mitigate the environmental losses that would result from the project, and that these impacts were avoidable in light of the availability of practicable alternatives.

**Subsequent Actions**: The RRWSG has released a draft supplemental EIS (SEIS) which is currently undergoing public review and comment. The SEIS evaluates three alternatives to meet the regional water supply needs: Ware Creek, Black Creek, and the applicant's preferred alternative, King William reservoir. The RRWSG has a pending Section 404 permit application for the King William reservoir before the Corps.

## SMALL BUSINESS REGULATORY ENFORCEMENT FAIRNESS ACT (SBREFA)

Question: What is the Agency doing to ensure that small entity compliance guides will be published for Agency rules using plain English that is understandable to the average small businessman?

Answer: EPA has established a task force to implement SBREFA's requirements for the Agency. Part of the task force's effort is focused on the small entity compliance guides. Issues the task force is exploring include: developing a template for the compliance guides to ensure that the guides are consistent yet flexible, timing for issuing the guides, and distribution channels.

SBREFA does not require the compliance guides be issued in a specific time period. Accordingly, the task force is exploring how to balance the need to issue the guides in a timely manner, ideally before small entities must comply with the rules, yet ensure that the guides are accurate, written in plain English and have undergone stakeholder review. The task force will likely have a recommendation concerning the template and process for developing compliance guides this summer.

In the meantime, EPA will continue issuing fact sheets and other forms of information with regulations. The Office of Enforcement and Compliance Assurance will continue developing "Plain English" guidance to assist small businesses such as the Plain English and Plain Korean Guides for "Perc Dry Cleaners: A Step-by-Step Approach to Understanding Federal Environmental Regulations",and "Fit to Print: A Step-by-Step Approach to Understanding Environmental Regulations and Pollution Prevention for the Lithographic Printer".

The Agency is reaching out to small entities in other ways. EPA has established a Printers' National Environmental Assistance Center and a National Agriculture Compliance Assistance Center, and we are planning to open a National Metal Finishing Resource Center and an Automotive Compliance Information Assistance Center. The Agency has also developed flexible enforcement policies such as the Final Policy on Compliance Incentives for Small Businesses and the Policy on Flexible State Enforcement Responses to Small Community Violations; these policies provide small entities the opportunity to identify environmental violations and come into compliance with limited or no penalties and flexible enforcement/compliance assistance responses.

## RULEMAKING IMPACT ON SMALL ENTITIES

Question: The Regulatory Flexibility Act requires the Agency to describe what it has done to minimize the impacts of regulations on small entities. Under what circumstances would the Agency promulgate a rule that does not minimize the impact on small entities to the maximum extent allowed by the statute granting the rulemaking authority?

Answer: In general, EPA will always strive to develop regulatory options which minimize the burden of Agency regulations on small entities, consistent with the statute granting rulemaking authority and our responsibility to protect human health and the environment.

## FACTORS TO DETERMINE IMPACT ON SMALL ENTITIES

Question: Please describe the factors the Agency will use to determine whether a proposed Agency rule will have a "significant impact on a substantial number of small entities," thus requiring a Regulatory Flexibility Analysis.

Answer: EPA will consider a number of factors in order to determine whether a regulation has a significant impact on a substantial number of small entities. Factors considered may include:

- Annualized compliance costs as a percentage of sales or as a percentage of annual government revenues;
- Measures of relative or disproportionate impact;
- For Small Business: closures caused by the rule, costs related to pre-tax profits, and capital costs related to tax flow;
- For Small Government: compliance costs to household (per capita) as a percentage of median household (per capita) income, and costs relative to tax and revenue base;
- For Small non-Government: Cost relative to revenues or endowments.

## AGENCY DEFINITION OF SMALL BUSINESS CONCERNS

Question: Will the Agency be using the SBA's definitions of "small business concerns" for the purpose of implementing the Act, and if not, what is the Agency's justification for using a separate definition?

Answer: EPA will begin with the SBA definitions of "small business" for the purpose of implementing the Act. However, the Agency may substitute an alternative definition in cases when that would be more appropriate. If the Agency decides that an alternative definition makes more common sense in the context of any regulation, EPA will consult with the Small Business Administration before proposing the regulation in the Federal Register. EPA will also offer its proposed alternative definition(s) for public comment.

## PROJECT XL ACHIEVEMENTS

Question: In your testimony before the Committee, you stated that the XL program was beginning to reap tremendous environmental benefits and significant cost savings. Please identify the specific XL projects or locations where environmental benefits or cost savings have occurred. For each such project or location, please estimate the reduction in emissions of other environmental benefit achieved, and/or the costs savings achieved.

Answer: Since the EPA announced its intention to initiate Project XL in the May 23, 1995, *Federal Register* publication "EPA's Regulatory Reinvention (XL) Pilot Projects," the Agency has received 47 proposals. 14 have been selected. Ideally, the Agency will reach a decision on selection of a proposal within two months, although that period may be extended to provide sufficient time for submission and consideration of supplemental material related to the proposed project. The Agency is currently working with the proponents of the 14 selected proposals to negotiate the Final Project Agreements (FPAs)--after which the projects will be implemented. We are preparing to finalize several of the FPAs in the near future.

With project implementation, the facility, affected State agencies, and EPA expect to realize increased environmental benefits and/or significant cost savings. As an example, both Jack M. Berry, Inc. (Labelle, FL) in partnership with Florida DEP and South Florida Water Management District, and the Intel Corporation (Chandler, AZ) expect to realize cost savings, improved environmental performance, and paperwork reduction through XL. The Berry FPA has been released for public comment ahead of schedule. We expect the Intel agreement to be released within a few weeks pending resolution of issues between Intel and the State of Arizona. Both firms are pursuing a single comprehensive operating permit, or contract, for one of their facilities which will replace numerous existing regulatory permits and regulatory operating requirements with varying expiration dates and renewal requirements. Intel also expects that, minus the need for permit modifications that routinely accompany its numerous process changes annually, the firm will be able to move products more quickly through production to market. Additionally, both companies expect that the reduced element of uncertainty will positively impact their capital expenditures and operational planning, yielding savings ranging from an estimated one to several million dollars per year. In return, EPA expects environmental results superior to those which would be achieved through compliance with current and reasonably anticipated future regulation. Berry has committed to improved environmental performance in the areas of water consumption and conservation; air emissions of volatile organic compounds, sulfur dioxide, and nitrous oxide; industrial wastewater treatment and woodland conservation; solid waste; and potable water and surface water management. Berry also will institute the ISO 9000 and the ISO 14000 management programs. Intel's project will use the concept of a plant site emission limit for hazardous air pollutants and volatile organic compounds and will yield reduced per-capita water consumption through effluent recycling, as well as cost savings and paperwork reduction realized from consolidated monitoring and reporting. Monitoring reports will be submitted for review to EPA on a regular basis and a schedule for periodic evaluation of the consolidated permits will be established.

Additional examples of increased environmental benefits and/or significant cost savings anticipated through the XL program include HADCO Corporation's (NH, NY, CA) project which proposes to promote recycling of metals from the waste streams of printed wiring board (PWB) manufacturers by delisting low-toxicity wastes under RCRA. Because of the toxicity of etching solvents used in the early 1970's, wastewater treatment (WWT) sludge from PWB manufacturing was "listed" hazardous wastes under RCRA Subtitle C. HADCO proposes a delisting of their WWT sludge because they have switched to less toxic etching solvents, which will allow them to transport WWT sludge directly to recycling facilities. Based upon the cost savings of delisting, the second phase of this proposal will allow HADCO to purchase an on-site sludge dryer that will enable them to recycle other non-RCRA process wastes. In addition, they propose creating a market for PWB WWT sludge, whereby HADCO could accept these non-RCRA wastes from smaller PWB manufacturers for recycling.

Yet another proposal, submitted by Weyerhaeuser (Flint River, GA), proposes a multi-media approach to environmental protection through development and implementation of a Minimum Impact Manufacturing (MIM) approach as an alternative regulatory strategy. Potential performance targets include reductions in total mill water usage; effluent parameters; total reduced sulfur emissions, beach plant effluent flow, hazardous waste generation, criteria and hazardous air pollutants. EPA will provide the facility with flexibility in how these goals are met. Weyerhaeuser will realize savings from the pollution offset, reduced paperwork requirements, and permit flexibility. For example, the plant will be able to trade cheaper hazardous air pollutant reduction strategies against what it perceives as the most expensive technological requirements of the proposed MACT standards (Cluster Rule). As another example, the facility will not have to go through permit review under the Prevention of Significant Deterioration (PSD)/Best Available Control Technology (BACT) program for criteria air pollutants. In exchange, the facility will commit to operate under a criteria pollutant cap that is 10% below its current emissions. Weyerhaeuser has estimated that these permit reviews cost the firm between $50,000 and $100,000 a piece.

The selected examples illustrate the potential positive impact, to both industry and the environment, of Project XL. This program is still in its infancy; as XL grows and develops we will be better able to quantify the environmental benefits and the costs savings achieved by the XL participants.

## COMMON SENSE INITIATIVE CHANGES AND ACHIEVEMENTS

Question: Please identify any changes in regulation, policy or specific permits and any environmental benefits or cost savings to date as a result of EPA's Common Sense Initiative?

Answer: The goal of the Common Sense Initiative (CSI) is a cleaner environment at less cost to industry and taxpayers. CSI is about bringing diverse stakeholders together to address environmental problems on a multi-media, sector-by-sector basis rather than a one-size-fits all approach, and moving beyond conflict, gridlock, and adversarial relationships to consensus-based environmental solutions.

In such an undertaking, the first goals and products need to be trust and communication among the various stakeholders. CSI has shown success in this area, with the various stakeholders involved in the six sector Subcommittees engaged and working well together, and reaching consensus on priorities and areas of concern. One measure of the strength of the CSI concept is the commitment its stakeholders have made to staying involved -- 96% of the people who served as members continued as members during CSI's first year; and as CSI moved into its second year, 95% of members were invited to serve again, and less that 4% of individuals invited have declined. These positive relationships being built among people and groups that have historically been antagonistic toward one another are valuable changes that will continue to pay off for the environment.

The seeds of trust and communication that CSI has planted have germinated into nearly 40 projects run by the six sector Subcommittees to explore and test an array of innovative approaches to environmental protection. A few examples include:

- o The "Metal Finishing 2000" project is testing new regulatory approaches in Michigan, Connecticut, and Rhode Island.
- o An Iron and Steel Brownfields project in Northwest Indiana, jointly funded by EPA and Indiana, is helping clean up and redevelop abandoned and contaminated properties.
- o A Marathon Oil refinery in Texas is participating in a "One Stop Shopping and Public Access Project" which should eliminate redundant reporting requirements and provide better access to environmental information for the community.
- o Ford Motor Company volunteered a plant for an alternative regulatory approach involving greater public participation in environmental decision-making.
- o Small printers in New York City are receiving training and information on environmental requirements and pollution prevention techniques.
- o The Computers and Electronics Subcommittee is developing new approaches to the disposal of electronic equipment -- not just to throw it away, but to reuse parts and recycle materials.

As the projects conclude over the next year or so, the results will bring changes to regulations, policies, and permits, and ultimately environmental benefits and cost savings.

From their deliberations and projects, advice and recommendations have started to flow from the six CSI sector Subcommittees to the CSI Council, and ultimately to EPA. Examples include better accessibility of EPA policies that affect industry and other facilities, better implementation of Title V of the Clean Air Act, and principles to use when dealing with iron and steel "Brownfields." EPA is determining the regulatory, policy, process, and permit changes necessary to implement such recommendations.

And even such things as simple as discussions in CSI sector workgroups are showing the benefits of the new cooperative relationships. During a discussion in the Overcoming Barriers to Pollution Prevention, Recycling, and Product Stewardship Workgroup of the Computers and Electronics Sector Subcommittee, industry representatives indicated that since spent lead solder pots were being treated as a hazardous waste, recycling was difficult. As a result of the discussions, EPA's Office of Solid Waste identified an earlier policy letter which exempted the solder pot dross from treatment as a hazardous waste. Now stakeholders know the material can be sent directly to recyclers, resulting in a significant savings to industry.

Although not at the destination yet, CSI is well on the road to where setting strong environmental standards through a multi-stakeholder, industry-tailored, holistic approach, using common sense, innovation and flexibility, is the rule rather than the exception.

## AUTHORITY FOR INTERNATIONAL PHASE-OUT OF LEAD

Question: During the appropriations hearing you stated your agency's work on the international phase-out of lead. What statutory authority do you have to undertake this initiative?

Answer: On February 20, 1996, the Environmental Ministers of the OECD agreed to a Ministerial Declaration on Lead Risk Reduction. The Ministerial Declaration and Council Resolution calls on member countries to reduce risk exposure to lead, including phasing down lead use in gasoline, phasing down the use of lead in paint, eliminating exposure of children to lead from children's products, and eliminating exposure of lead from food packaging. Based on the severity of lead exposures and its world-wide impact -- particularly to children -- we believe this agreement is especially meaningful.

On June 5, 1995, Wendy Sherman, Assistant Secretary of Legislative Affairs, Department of State, wrote to Senator Bond stating that an agreement on lead "would not authorize domestic actions not otherwise authorized under U.S. law and regulation." Further, Assistant Secretary Sherman stated that "because the agreement will be concluded as an executive agreement, it will not have the status of a treaty and will not, by definition, be a self-executing treaty." The EPA and State Department worked closely with Senator Bond's staff while the formal U.S. position was being developed. Senator Bond's staff participated in several State Department/EPA meetings with non-governmental organizations on this subject.

It should be noted that the United States lead industry supports the Ministerial Declaration and that U.S. industry is taking a leadership role in developing a world-wide voluntary industry action program to reduce lead exposures. This plan will be carried out in conjunction with the Ministerial Declaration.

## AGENCY ACCOMPLISHMENTS IN REGULATORY REINVENTION

Question: What rules has the agency changed, what regulations were possibly issued more quickly, what quantitative reductions in emissions have occurred, what are the cost savings associated with, what other specific accomplishments have been made because of the Agency's Common Sense Initiative, Project XL, Performance Partnerships, and Environmental Technologies programs?

Answer: Attached is a progress report on EPA's reinvention activities. Many reinvention projects are underway at EPA -- all directed at changing the way EPA is carrying out its mission. EPA's reinvention philosophy is to focus on environmental results, allowing flexibility in how results are achieved; to share information and decision-making with all stakeholders; to create incentives for compliance with environmental requirements; and to lesson the burden of complying with environmental requirements.

The Common Sense Initiative, Project XL, Performance Partnerships, and the Environmental Technologies programs are long-term projects designed to change traditional program approaches. Many promising projects are underway in these programs but, in general, they are not designed to, and should not be expected to, produce immediate results. The cost savings, emission reductions or new regulatory approaches derived from these programs can be expected over a longer time period.

Project XL supports initiatives by responsible companies, state and local governments, communities, federal agencies and other regulated parties to demonstrate excellence and leadership by reducing costs of environmental management and achieving better environmental results than required by existing regulations. Over 40 applications have been received, and 14 proposals accepted for development into full scale projects. First "final project agreements" are expected in the next few months, at which point regulated entities can start to implement alternative approaches which will yield cost savings and greater environmental results. Over a longer period of time, EPA will incorporate the results of the XL pilots into its regulatory programs -- and multiplying the benefits that can be derived from these alternative approaches.

States and EPA agreed to a new National Environmental Performance Partnership System (NEPPS) in May, 1995 which will reduce EPA oversight for strong state programs and focus EPA attention on areas where states need help. The key concepts of the state-EPA partnership is joint planning and priority setting; increased use of environmental measures; public involvement; funding flexibility with accountability; and continuous improvement. Six states are piloting use of NEPPS this year and 34 states plan to participate next year. EPA has signed performance partnership grants, to provide funding flexibility to better address unique public health and environmental priorities, with two states (Colorado and Utah) this year. Twenty four states are considering signing performance partnership grants with EPA next year.

The Common Sense Initiative is a fundamentally different vision of environmental policy -- that moves beyond a single media approach to an industry-by-industry approach that looks across environmental media. The objective is to find ways to achieve a cleaner environment at less cost through consensus-based approach. The six sectors selected for the Common Sense Initiative have developed 43 specific projects that are underway. These projects have been grouped into key issue areas, such as community technical assistance and community involvement; brownfields, permitting, compliance; innovative technology; and reporting requirements.

The Environmental Technology Initiative (ETI) supports more than 250 partnerships and projects throughout the United States to remove barriers to technology innovation. Projects span a range of issues -- technologies to prevent pollution, control and treat air and water pollution, remediate contaminated soil and groundwater, reduce greenhouse gas emissions, assess and monitor pollution levels, and manage environmental information. Substantial cost savings and environmental benefits have been incorporated in the design of ETI projects (e.g., flexibility in Clean Air Act Title V permits that will be applicable to thousands of companies, or cleaner technologies for printed wiring board companies that allow greater production and reduced pollution).

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# REINVENTING ENVIRONMENTAL REGULATION

## COMMON-SENSE STRATEGIES TO PROTECT PUBLIC HEALTH:
## A Progress Report on Reinventing Environmental Regulation
## Executive Summary

> "Do you believe we can expand the economy without hurting the environment? I do. Do you believe we can create more jobs over the long run by cleaning the environment up? I know we can. That should be our commitment. We must challenge business and communities to take more initiative in protecting the environment and we have to make it easier for them to do it."

**-- President Clinton**
**1996 State of the Union Address**

One year ago, on March 16, 1995, President Clinton, Vice President Gore and EPA Administrator Carol Browner issued a report, *Reinventing Environmental Regulation,* launching 25 high priority actions to develop and expand the Administration's common-sense strategies that protect public health and the environment. EPA has made substantial progress in meeting all of the 25 high priority actions over the past year. These reforms are strengthening the environmental protection system so it meets the challenges of the future as well as solve the problems of today. This progress report highlights many of the important accomplishments in EPA's reinvention of environmental regulation and related common-sense, cost-effective initiatives that are part of the Clinton Administration's new direction for EPA. Changes have been made in four categories

1) **Reducing paperwork and cutting red tape:** To help businesses to comply with environmental laws faster and more efficiently, EPA:

- is making changes to more than 70 percent of its regulations, and is **working to eliminate 1400 pages of obsolete rules -- some 10 percent of EPA's total regulations.**
- has **eliminated more than 10 million hours of paperwork and red tape** for large and small businesses seeking to comply with environmental laws. This reduction is the **equivalent of returning a quarter-million workweeks back to the private sector** to boost productivity and profits. EPA also expects to eliminate another 10 million hours of paperwork by the end of 1996.

2) **Making it easier for businesses to comply with environmental laws:** Because it makes more sense to prevent pollution than to clean it up after the fact, EPA is making it easier for businesses to comply with environmental regulations. While recognizing that a strong enforcement capability ensures strong public health and environmental protection, EPA also is implementing the following innovative approaches:

- Under the **Common Sense Compliance incentives for small business**, penalties for first-time violators can be waived or reduced if the business repairs the problem and comes into compliance with the law.

- EPA's **Environmental Leadership Program** challenges facilities to take innovative approaches -- such as environmental auditing and pollution prevention -- to enhance their ability to meet environmental requirements.

- EPA also has funded **Small Business Compliance Assistance Centers for the metal finishing, printing, automotive repair and farming industries** to help these small businesses identify low-cost compliance and pollution prevention strategies; and make compliance easier for as many as one million small businesses

3) **Using innovation and flexibility to achieve better environmental results:** EPA is encouraging innovative and flexible approaches to achieve better environmental results -- tapping the creativity of industry, states and local communities to increase protections for all Americans:

- With **Project XL -- for excellence and leadership** -- EPA offers this challenge: If you can meet even higher environmental performance standards, we will provide flexibility and cut red tape so you can find the cheapest, most efficient way to do it. Twelve industry or state XL projects and one city project are now moving forward.

- EPA is piloting other innovative approaches to focus on problems that pose the highest risks to public health, and help control pollution by allowing facilities to trade pollution reduction "credits" on the open market with facilities that have not made those reductions.

4) **Increasing community participation and partnerships:** EPA is increasing community participation and partnerships to engage states, tribes, communities and citizens in the effort to protect public health and the environment:

- Community right-to-know has been strengthened and expanded, and further expansions are being considered to provide citizens with more complete information about local toxic chemical releases In keeping with right-to-know, EPA has **expanded public access to Agency information** -- particularly Internet access.

- EPA has established **Performance Partnerships that give states and tribes funding flexibility to combine federal grants to meet their environmental needs**.

- EPA, industry and other groups established the **Partnership for Safe Drinking Water**, a voluntary commitment to improve drinking water safety, with a focus on high-risk contaminants.

Reinventing environmental regulation at EPA is a fundamental change in the way the Agency implements public health and environmental protection. Under the leadership of President Clinton, Vice President Gore and Administrator Browner, EPA is applying common sense, flexibility, and creativity in an effort to move beyond the one-size-fits-all system of the past and achieve the very best protection of public health and the environment at the least cost. In addition, EPA is extending these reinvention approaches from the regulatory arena to its efforts to reauthorize environmental laws, proposing responsible legislative reforms that also embody these principles. Committed to changes that make both economic and environmental sense, the Clinton Administration believes that these improvements to our system of environmental regulation will strengthen public health and environmental protections.

### *Reducing Paperwork and Cutting Red Tape*

> "The laws and regulations that brought our environment back from the brink worked well for their time. But what worked yesterday may not work today or tomorrow. We believe in higher environmental standards, but we also believe in more partnership between environmentalists and people working in the private sector. We believe in more flexibility and more focus on results instead of rule making. We know that going through Washington may not be the only road to a safer and cleaner world."
>
> **-- President Clinton, March 11, 1996**

**Because every hour saved in the environmental regulatory process is an hour that can be spent better protecting public health and the environment, EPA is reducing and streamlining paperwork and red tape.** Reducing regulatory red tape and paperwork will help businesses to comply, while saving money and time that can be better spent in preventing pollution and boosting productivity and economic growth. Following are some of the innovative actions EPA has already completed to reduce the unnecessary burdens and costs of environmental reporting and record-keeping:

***1)*** ***Time and Paperwork Burdens Reduced:*** To help businesses comply with environmental and public health protections more efficiently and effectively:

- EPA is making changes to more than 70 percent of its regulations, and is working to eliminate 1400 pages of obsolete rules -- some 10 percent of EPA's total regulations.

- In just one year, EPA has **eliminated more than 10 million hours of paperwork and red tape** for large and small businesses seeking to comply with regulations ranging from air and water pollution controls to pesticides registrations and chemical releases. **This is the equivalent of returning a quarter-million workweeks back to the private sector** to boost productivity and profits.

- For industries that discharge wastewater into rivers, lakes and streams, EPA has streamlined monitoring and reporting, reducing the time spent on water quality monitoring by 4.7 million hours.

EPA expects to eliminate another 10 million hours of paperwork by the end of 1996 with similar measures that increase opportunities for electronic reporting, eliminate some reporting requirements, and make forms shorter and easier to use.

***2)*** ***Accountability and Efficiency Boosted Through Electronic Reporting:*** To increase public accountability and ensure that industries are meeting public health standards, EPA is increasing opportunities for businesses to **file electronic reports on emissions and discharges** in air, land and water.

- Over the last year, EPA successfully tested electronic reporting from reformulated gasoline producers -- an effort now being expanded to the entire petroleum industry -- on how their product meets Clean Air Act requirements for cleaner gasoline.

- In addition to speeding and simplifying the reporting process, saving time and money for industry, the new system has resulted in more accurate data on clean gasoline production.

In spring 1996, industry reports on discharges of wastewater into rivers, lakes and streams also will be accepted electronically. EPA is exploring additional ways to expand electronic reporting.

*3)* *Air Pollution Permits Simplified:* To better achieve reductions in harmful industrial air pollution and provide the public with better information about such pollution in their communities, EPA has taken a number of steps to streamline how industries obtain air pollution "permits" -- comprehensive controls on air pollution emissions from industrial facilities.

- In August 1995, EPA proposed ways to simplify the complex procedures under which air pollution permits are issued, making it easier for industries to identify parts of their facilities that were violating air pollution standards. Companies will be better able to keep their processes up-to-date without invoking burdensome procedural requirements

- In March 1996, EPA proposed reforms that will further simplify the process by combining multiple, overlapping Clean Air Act requirements into one permit, paving the way for substantial reductions in paperwork and costs for businesses, while allowing them more time to focus on avoiding violations of air pollution controls.

- **These actions are expected to reduce related paperwork burdens for businesses by as much as 10 million hours over the next three years, saving about $600 million.**

In April 1996, EPA will propose significant revisions to streamline the permitting process for new sources of air pollution -- reforms expected to further reduce burdens for many businesses and cutting in half the number of industrial projects that need to obtain new permits

*4)* *Low-Risk Pesticide Self-Certification and Exemption:* As part of its efforts to focus on the highest risks to public health, EPA in March 1996 exempted 31 low-risk pesticide ingredients -- which have been determined to pose little risk to public health and the environment -- from registration with EPA, changing a longstanding requirement.

- In addition to focusing Agency and industry efforts on higher-risk substances, this action reduces the regulatory burden for small businesses that manufacture these ingredients

- In a similar effort, in May 1995, EPA expanded ways for pesticide companies to self-certify that changes to low-risk pesticide labeling and formulations comply with EPA requirements Previously, companies had to seek approval for even minor changes

## *Making It Easier for Businesses to Comply with Environmental Laws*

> "Our common-sense initiative for small business emphasizes results, not punishment. If a small business makes a mistake and is committed to fixing that mistake, we will waive the fine if they repair the problem. This new way of doing business overturns the conventional wisdom that we have to somehow choose between the health of our environment and the health of our economy."
>
> **-- President Clinton, March 11, 1996**

**Because it makes more sense to prevent pollution than to clean it up after the fact, EPA is making it easier for businesses to comply with environmental regulations.** EPA recognizes that preventing pollution is the most sensible approach to protecting public health -- and recognizes that most businesses want to comply with the law. Too often, violations occur because many businesses lack the technical assistance needed to fully comply For the first time, EPA has begun an ambitious program to simplify regulations and make it easier to comply with environmental laws. The following innovative approaches are already making progress.

*1)* *Common Sense Compliance for Small Businesses:* EPA has launched a new program to encourage common-sense compliance for small businesses in June 1995.

- Under the new policy, penalties for first-time violators can be waived or reduced if the business repairs the problem and comes into compliance with the law.

- The policy also provides small businesses with a grace period to correct violations without penalty as long as the violation is not criminal or does not create a serious environmental threat, and the company participates in EPA or state compliance assistance programs.

*2) Achieving Compliance through the Environmental Leadership Program:* To help businesses find the best ways to clean up and prevent pollution, EPA has launched the Environmental Leadership Program.

- Ten companies and two federal facilities, ranging in size from large public corporations to smaller privately held businesses, are participating in the program's pilot phase.

- These pilot projects are testing innovative approaches -- such as environmental auditing and pollution prevention -- to reduce costs and paperwork while enhancing their ability to meet environmental requirements.

Participating facilities will demonstrate how these approaches can help other regulated businesses comply in cleaner, cheaper and smarter ways.

*3) Flexible Compliance Policy for Small Communities:* Many small communities want to protect the health of their citizens, but lack the administrative, technical and financial capacity to ensure that their towns are complying with environmental laws. In November 1995, EPA announced a policy that promotes states' use of enforcement flexibility to provide compliance incentives for small communities.

- Under the policy, states will help communities identify and prioritize their environmental compliance needs and create a reasonable schedule for communities to correct their environmental violations.

- This policy promotes increased compliance by allowing communities to develop a plan that suits their individual needs -- so they can first focus on their worst environmental problems -- and assuring them that asking for help need not result in a penalty.

*4) Grants Awarded for Small Business Compliance Assistance Centers:* To advance small businesses' ability to protect public health and prevent pollution before it starts, EPA has funded Small Business Compliance Assistance Centers -- places where small businesses can get all the information they need about regulations that apply to their business, and get it in plain, easy-to-understand language. The centers also provide information on how small businesses can reduce their costs by preventing pollution. The centers support state and local agencies and industry trade associations, and could assist more than one million small businesses in the following sectors:

- **The National Printers' Compliance Assistance Center** currently offers compliance assistance and pollution prevention information to some 100 printing businesses through two Internet-based bulletin boards.

- **The Agriculture Compliance Assistance Center** is a "one-stop shopping" source for small farms with comprehensive, easy-to-understand information about cost-effective approaches to pollution prevention and compliance.

- **The National Metal Finishing Resource Center** will provide a one-stop, electronically linked information and technical assistance source on solving compliance and production problems, beginning in fall 1996.

- **The Automotive Repair Compliance Assistance Center** will provide information on flexible, common sense ways to prevent pollution and comply with environmental laws to automotive service and repair shops via the Internet and telephone systems, beginning in spring 1996.

*5)* ***Incentives for Self-Policing:*** To encourage companies to voluntarily correct pollution violations, in December 1995, EPA announced a new policy offering reduced penalties for eligible participants who quickly and voluntarily disclose violations of environmental laws and take action to correct them.

- In the three months since its inception, the policy has encouraged more than 50 companies to disclose environmental violations they discovered through self-policing. EPA has settled 13 of these cases, issuing 12 waivers and one greatly reduced penalty.

- Among the incentives to comply provided under the policy are: 1) If a company or public agency voluntarily identifies, discloses and corrects violations according to the conditions outlined in the policy, EPA will eliminate punitive enforcement penalties; and 2) If no serious public health risk has occurred from the pollution violation, and other conditions are met, EPA will not recommend that the Department of Justice bring criminal charges against a company or public agency that acts in good faith to identify and correct those violations.

*6)* ***First Sector-Wide Enforcement Agreement:*** To achieve consistent corrections of recurrent environmental problems across an entire industry, EPA is pursuing sector-wide enforcement agreements.

- The first industry-wide settlement, in October 1995, included 51 enforcement cases involving more than 200 natural gas processor facilities across the country, for failure to report specific information on volumes of toxic chemicals released, as required under the Toxic Substances Control Act. As part of the program, the natural gas processing industry agreed to put in place controls that will prevent these types of violations in the future.

This is the first time EPA has worked with an industry association to develop a national agreement to successfully resolve multiple environmental violations at one time across a sector.

*7)* ***EPA Policy to Support Risk-based Enforcement:*** To target pollution violations that pose the highest risks to public health and the environment, EPA has initiated a sweeping initiative to focus enforcement resources on violations that are likely to pose the highest risks.

- In September 1995, EPA issued a new policy on the frequency of inspections of wastewater discharges under the Clean Water Act's National Pollution Discharge System. The new policy will allow inspectors to reduce their visits to facilities that handle lower risk materials and have good compliance track records, so that resources can be targeted to more serious compliance and health risk problems.

EPA also is providing enforcement inspectors with risk assessment tools so they can set enforcement priorities based on the level of public health risk.

## *Innovation and Flexibility to Achieve Better Environmental Results*

> "What I see in Project XL is a real paradigm shift . . . The new system envisioned by Project XL is to work cooperatively and focus on the results: a cleaner environment; a faster, less costly system; with more input from the local community . . . Just think of the environmental gains we could make if we tap into the creativity that put 5.5 million transistors on a chip the size of your thumbnail!"
>
> **– Gordon Moore, Chairman of the Board**
> **Intel Corporation**

**EPA is encouraging innovation and flexibility to achieve better environmental results -- tapping the creativity of industry, states and local communities to increase protections for all Americans.** Using incentives and flexibility, EPA is encouraging businesses, states, tribes, and local communities to achieve better environmental results in ways that are cleaner, cheaper and smarter. Among the innovative approaches now in motion are:

*1) Going Beyond Compliance to Achieve Excellence and Leadership:* To encourage regulated entities to go beyond compliance with environmental laws, Project XL -- for excellence and leadership -- offers business, states and communities this challenge: If you can meet even higher environmental performance standards, EPA will provide flexibility and cut red tape so that you can find the cheapest and most efficient way to do it. An integral part of pilot XL projects is the involvement of local citizens, community groups, businesses, and state and local governments in the process of achieving better results. Ten companies and two state agencies are currently using this flexibility in the following ways:

- **HADCO**, a manufacturer of printed wiring boards, will create a market for recycling waste from electronic facilities by streamlining hazardous waste rules at facilities in New Hampshire, California and New York.

- **Intel Corporation** will build a new facility designed to achieve better environmental results from the start, through an environmental "contract" with EPA and the State of Arizona.

- **Merck & Company** will use a comprehensive single permit approach to control air pollution from its Elkton, Va., facility.

- **3M Company** will take a "one-stop" approach to permitting by developing a single, comprehensive permit for air, water and waste at facilities in Minnesota, Illinois, and California.

- **Anheuser-Busch Companies**, Inc. will set a single environmental bottom line target for air, land and water pollution that result from its operations in Jacksonville, Fla.

- **AT&T's Lucent Technology** will take an innovative approach to monitoring water pollution at its Allentown, Pa., facility by utilizing outside auditors.

- **Minnesota Pollution Control Agency** will pilot Project XL across the state to reduce air, land and water pollution.

- **California's South Coast Air Quality Management District** will work with area companies to reduce air pollution from commuting trips.

- **Union Carbide** will use a plant-wide, stakeholder-driven process to improve environmental performance at its Taft, La., petrochemical plant.

- **Weyerhaeuser** will operate its Flint River, Ga., plant as a "Minimum Impact Mill," a comprehensive approach to minimize the overall impact of the mill on the environment.

- **IBM** will biologically treat its wastes at its Essex Junction, N.Y. facility, rather than shipping them off site for incineration.

- **Berry Corporation** will work with EPA and the state of Florida to combine multiple environmental permits into a single, comprehensive operating plan at an orange juice processing facility in La Belle, Fla.

*2)* ***Alternative Strategies for Communities -- Anaheim, California:*** To encourage communities to achieve better results in areas where they are facing persistent environmental problems, EPA announced a Community XL project in Anaheim, California, in February 1996. Anaheim proposes to work with all businesses, industries, schools and other stakeholders in the community to develop and implement a plan to prevent contamination of groundwater near the public water supply wells.

*3)* ***Prioritizing Resources to Address Areas of Highest Risk:*** To ensure that Agency actions address the highest risks to public health and the environment:

- EPA has reorganized its research and development program to focus on high-risk health effects, exposures, and risk management.

- A new system for planning, budget and accountability will help ensure that sound science is used in prioritizing Agency resources to address high-risk problems.

- New Agency-wide policies for peer review and risk characterization -- as well as a new policy to consider children's health and environmental risks consistently in Agency actions -- also are ensuring that the best scientific knowledge is applied in actions to protect public health and the environment.

EPA also has asked its independent Science Advisory Board to revise and update its landmark report on *Reducing Risk*, so that the best and most current knowledge can be employed to lower public health risks from environmental hazards wherever possible.

*4)* ***Removing Barriers to Recycling:*** To encourage recycling of household hazardous wastes, such as discarded batteries, thermostats and pesticides, EPA revised its rules to help stores and businesses to collect these items for recycling -- an effort that was not being fully pursued because of the regulatory burden involved.

- In April 1995, EPA issued a new regulation which eases the burden by as much as a half-million work hours on participating retail stores and businesses.

- **Approximately 90,000 businesses will benefit from this burden reduction, saving as much as $70 million annually.**

*5)* ***Focusing on High Risk Hazardous Waste:*** To advance EPA's commitment to target the highest risks to public health and the environment, in November 1995, EPA proposed a new hazardous waste identification rule that will dramatically refocus the regulatory program on high risk wastes.

- This rule will exempt wastes that do not pose a significant public health threat from the hazardous waste management regulatory system -- resulting in substantial savings to businesses handling these low-risk wastes and allowing more time for both government and industry to focus on greater risks to public health and the environment.

- **About 6,000 facilities would benefit from this burden reduction, saving as much as $75 million annually.**

*6) Open Market Air Emissions Trading:* To achieve reductions of smog-causing industrial air pollution, EPA proposed in August 1995 a model rule for "emissions trading" of smog-creating pollutants.

- This policy allows a facility that exceeds pollution reductions the opportunity to sell its "surplus" reductions (or "credits") to facilities that find credits a more cost-effective way to comply with these requirements.
- Once in a state plan, companies may freely engage in trades without prior approval as long as reporting and public health standards are being met.
- This program provides states and industries another innovative compliance option to cost-effectively and efficiently meet their public health goals for reducing the health impacts of harmful smog.

*7) Promoting effluent trading in watersheds:* To achieve reductions of industrial and other water pollution in our rivers, lakes and streams, EPA announced in January 1996 a new policy to encourage the use of effluent trading within watersheds.

- This policy creates an economic incentive for pollution sources to exceed requirements for water pollution reductions, through the opportunity to sell "surplus" reduction credits to facilities that find credits a more cost-effective way to comply with these requirements.
- These changes benefit facilities that go beyond compliance while helping other facilities come into compliance.

*8) Alternative Strategies for Department of Defense:* To assist Department of Defense facilities achieve better public health and environmental results, EPA and the Department of Defense agreed in November 1995 on a framework for XL pilot projects at Defense facilities across the country. The projects, with broad community participation, will couple cost-effective, innovative ways to improve environmental performance at Defense facilities, with more flexibility and reduced red tape in the compliance process. These projects will combine pollution prevention, compliance and technology research projects.

## *Increasing Community Participation and Partnerships*

> "...Think about what your ordinary day is like. Think about the information that keeps you and your family safe and healthy. Think about what your child might see that might change his or her behavior -- a stop sign, a label that tells you what's in the food you buy for your family, the warning on a pack of cigarettes. This and other things are simple things that we take for granted because their cost is minimal, but their value is priceless. The silent threat posed by pollution is as

real and dangerous as the threat of a speeding car to a walking child. We've known for a long time that what we can't see can hurt us."

-- **President Clinton, August 8, 1995**

**EPA is increasing community participation and partnerships to engage states, tribes, communities and citizens in environmental protection.** Recognizing that citizens affected by environmental problems have a central role to play in environmental protection, EPA is encouraging local participation and partnerships through policies and regulatory changes that move environmental decisions closer to the problem. The following innovative community-focused initiatives are underway:

*1) Funding Flexibility through State and Tribal Performance Partnerships:* To help states and tribes solve their most pressing environmental and public health problems, EPA established in May 1995 a landmark program that gives states and tribes flexibility to meet their environmental goals.

- **States with strong environmental programs will be given a stronger role** in setting environmental and public health priorities, along with the ability to direct federal resources to meet the greatest environmental needs. This allows EPA to focus on assisting those states and tribes that need more help in solving persistent public health and environmental problems.

- EPA also is developing a program to allow states and tribes **funding flexibility, to combine several program grants into a single grant** that meets their specific needs, as long as they are consistent with environmental requirements. This program is expected to reduce administrative burdens and improve environmental performance. While EPA awaits Congressional approval to move forward with this program, **five states have already signed "Performance Partnership" agreements** with EPA -- including Colorado, Delaware, Illinois, North Dakota, and Utah.

*2) Expanding Community Right-to-Know About Toxic Chemical Releases:* For nearly a decade, Americans have had an important right: the right to know about what dangerous chemicals are being released into their communities. Armed with Community Right-to-Know information, citizens around the country are taking action to solve local environmental problems that affect their health and safety. Since the inception of these laws in 1986, reported releases of toxic chemicals have declined by 43% nationwide. EPA's Toxics Release Inventory is an annual inventory of the amount of toxic chemicals that industries have released into the environment, organized by zip code. Citizens have easy access to these reports through local libraries, state and federal environmental offices, online electronic networks, and EPA's toll-free hotline.

- **EPA has acted to strengthen and expand the public's right to know** about local pollution by requiring Federal facilities and government contractors to report on chemical releases, by considering expansion of information reported to include industries beyond manufacturing and broader information about chemicals, and by making it easier for small businesses to report right-to-know information.

*3) Providing Safer Drinking Water:* To improve the safety of the nation's drinking water -- particularly from new microbial contaminants like cryptosporidium -- EPA has established the Partnership for Safe Drinking Water with industry associations, drinking water systems and community groups nationwide.

- Under this voluntary initiative, participating water systems must have a third party assess water operations, implement system improvements identified by the assessment, and communicate water safety information to their customers. Since last fall, **122 drinking water systems serving 63 million people have joined the partnership**.

*4) Brownfields Program Removing Barriers to Cleanups and Development:* A significant problem for American communities are brownfields -- abandoned, contaminated industrial or commercial properties that are less toxic than Superfund sites, but still face barriers to their redevelopment.

- **With seed money from the Administration's Brownfields Action Agenda,** cities across the nation are participating in pilot projects to redevelop brownfields and return them to productive community use.

- **Forty Brownfields pilots are moving forward** to restore abandoned sites to new uses, thereby creating jobs, economic growth, increased property values, and tax revenues -- and protecting the environment by encouraging development on existing sites, rather than in undeveloped areas. EPA's FY 1997 budget request calls for expanding pilots in additional U.S. cities.

- **In Cleveland, Ohio,** for example, $3.2 million has been leveraged in environmental cleanup and property improvements to a bankrupt and abandoned site. The site is now home to several businesses that employ 171 new workers. **Payroll tax base improvements alone have netted more than $1 million for the local economy.**

- The new Clinton Administration Brownfields Tax Incentive for developers who clean up and redevelop these properties will **make available $2 billion over seven years, and is expected to spur some $10 billion in private cleanups, and return to productive use as many as 30,000 brownfields properties.**

*5) Expanding Electronic Access to Agency Information:* In keeping with the Clinton Administration's commitment to community right-to-know about local pollution, EPA has expanded public access to Agency information about public health and environmental problems and solutions.

- Citizens, businesses and other interested groups can more easily access new EPA rules on the Internet, as well as **submit their comments electronically on pending environmental and public health rules** the Agency is considering.

- The Agency's electronic ENVIROFACTS also provide public access to information about environmental issues at local facilities.

- **In February 1996, nearly one-half million people accessed EPA's Internet home page.**

6) *Allowing States and Tribes Flexibility in Municipal Landfill Permits:* To increase local flexibility in handling environmental issues, in January 1996, EPA proposed a rule which provides flexibility to states and tribes to implement performance standards for municipal solid waste landfill permits. The performance-based approach sets goals to ensure that public health and environment protections are achieved. Most states and many tribes have already opted to use this new flexibility in setting their standards.

7) *Chemical Industry Challenged to Prevent Pollution, Create Safer Chemicals:* To encourage the chemical industry to prevent pollution -- particularly through safer manufacturing processes -- and to encourage the development of safer chemicals, EPA and industry partners issued a "Green Chemistry Challenge" in October 1995.

- The Challenge -- a new awards program that recognizes and promotes fundamental breakthroughs in chemical production processes that prevent pollution -- has received **over 70 nominations, and the first awards will be announced in April 1996.**

8) *Community-Based Environmental Protection:* To help communities to become more actively involved in managing environmental problems, EPA's Community-based Environmental Protection program encourages local citizens -- neighborhoods, cities, and watersheds or other ecosystems -- to work together to identify and set priorities and find innovative solutions to environmental problems.

- EPA offices around the country are providing communities with technical assistance and information to foster these community-based solutions and to encourage citizens, local and state governments, and business to work together on consensus-based approaches.

9) *Pesticide Environmental Stewardship Program:* To reduce the health and environmental risks posed by agricultural pesticide use, EPA is working with the Department of Agriculture, the Food and Drug Administration, and commercial users of pesticides in a voluntary partnership to reduce pesticides risks. To date, approximately 40 pesticide user groups -- representing growers and other industries that use large quantities of pesticides -- have joined the program.

## ENERGY STAR PROGRAM

Question: The Conference Report issued by Chairman Lewis and myself stated, "The conferees note that over $80 million remains available for this (Climate Change Action Plan) program, an amount double that provided in fiscal year 1994. The agency is directed to terminate funding for programs which compete directly or indirectly with commercial business, including the Energy Star Homes Program."

I read recently in the New York Times that the EPA in conjunction with the Department of Energy will be offering manufacturers of appliances and building materials the right to use a Government seal of approval, the "Energy Star," if their products meet Government efficiency standards. According to the New York Times, "The move is a major expansion of the Energy Star program."

This is in direct conflict with the conference report. How much has been spent on any research that your agency has done for this project? What is the agency's expected total expenditure on this program for this fiscal year? Provide a timetable for the proposed implementation?

Answer: The Conference Report focused on the Energy Star Homes Program. The announcement described in the New York Times concerned the recent agreement between EPA and DOE under which DOE will use the Energy Star label to designate highly efficient consumer appliances such as room air conditioners, clothes washers, and building envelope components such as windows. EPA has already labeled heating, ventilating and cooling equipment, insulation products, and business and consumer electronics such as computers and fax machines.

EPA has spent no funds on research for the project described in the New York Times and plans to spend no funds on research for this project. EPA has spent nothing and will spend no funds for the labeling of appliances, building materials, or other products under the purview of the Department of Energy.

EPA's total estimated expenditures for Energy Star products labeling activities is approximately $5 million in FY 1996.

PARTICIPATION IN ENERGY STAR PROGRAM

Question: I understand that the agency targeted 28 cities in researching this project. Please provide to the committee a list of those cities.

Answer: To assist successful market transformation to the widespread purchase of pollution preventing, energy-efficient products, EPA worked to identify markets where consumers would be most receptive to key information and where efforts would have a maximum impact on energy savings and pollution prevention. The selection criteria included utility rates, which is an important factor that determines the cost savings for the consumer, and fossil fuel consumption, another important factor which helps to determine the benefit to the environment. Twenty eight cities that fit these criteria are:

Houston TX, Sacramento CA , San Francisco CA, Los Angeles CA , Philadelphia PA , Dallas/Ft. Worth TX, New York NY, Seattle WA , Washington DC, Boston MA , Phoenix AZ , Chicago IL , Hartford/New Haven CT , Detroit MI , Minneapolis MN, Pittsburgh PA , Tampa FL , Miami FL, San Diego CA , Baltimore MD, Cleveland OH , St. Louis MO, Orlando FL, Atlanta GA , Norfolk VA, Milwaukee WI, Las Vegas NV, and Columbus, OH.

## QUESTIONS SUBMITTED BY SENATOR BURNS

FEDERAL BUDGET CUTS FOR EPA

Question: How does EPA intend to allocate budget cuts between the federal government and grants to states to administer federal programs?

Answer: The 1996 Appropriations Act changed EPA's account structure so that its operating programs and state grants programs are in separate appropriation accounts. By law, funds cannot be moved from one appropriation account to another unless specifically authorized. Therefore any reductions to the state and tribal grants account would be applied solely to state and tribal grant programs. Likewise, any reductions to the Agency's operating programs appropriation accounts would be applied across operating programs. Therefore, under EPA's new account structure, as set forth in statute, EPA does not have the authority to allocate cuts between its federal operating programs and grants to states.

## METHODOLOGY FOR BUDGET CUTS

Question: Does EPA intend to cut proportionately or allocate the budget reductions in some other manner?

Answer: EPA applies Congressionally-mandated reductions to its programs according to directions contained in the Appropriations Act, to the extent that such a level of detail is present in statute. In instances where EPA has been provided with discretion for applying reductions across programs, the Agency carefully prioritizes its activities to ensure that its limited resources are directed to the highest risks to human health and the environment. Given resource constraints, activities that support statutory or court-ordered deadlines are also protected as much as possible. Once these criteria are taken into account, reductions are applied in as fair and even a manner as possible, while taking into account the unique needs of each program's mission and deadlines. Finally, EPA reviews its lowest priority activities to determine if any general reductions should be applied to them.

## PRESERVATION OF FUNDS FOR STATE PROGRAMS

Question: Can you give me any assurances that the state programs in Montana, or any other state, will be preserved as close as can be expected, to current grant levels based upon their current primacy agreements?

Answer: The Administration's request for the State and Tribal Assistance Grants (STAG) appropriation account reflects the Agency's commitment to support and preserve the capacity of the states and tribes to operate their own environmental programs. The FY 1997 request for state and tribal program grants is $674,206,900. This request reflects an increase of $16,206,900 over the $658,000,000 that was appropriated for FY 1996. The attached table compares the distribution of these funds by grant program for FYs 1996 and 1997.

Also included in the Administration's request for the STAG account is $2,178,000,000 for Clean Water and Drinking Water State Revolving Funds and other water infrastructure projects. This represents a $23,000,000 increase over the $2,155,000,000 appropriated in FY 1996.

If the President's FY 1997 Budget for these programs is appropriated by Congress as requested, then Montana, or any other state, can be assured that their current grant levels will be preserved or increased.

## STATE AND TRIBAL PROGRAM GRANTS

Dollars in Thousands

| | Grant | FY 1996 Appropriation | FY 1997 President Budget |
|---|---|---|---|
| | **Air & Radiation** | | |
| 1 | State and Local Assistance | $169,189.9 | $153,189.9 |
| 2 | Tribal Assistance | $5,000.0 | $5,882.2 |
| 3 | Radon | $8,158.0 | $8,158.0 |
| | **Water** | | |
| 4 | Pollution Control (Section 106) | $80,200.0 | $80,700.0 |
| 5 | Nonpoint Source | $100,000.0 | $100,000.0 |
| 6 | Wetlands Program | $15,000.0 | $15,000.0 |
| 7 | Water Quality Cooperative Agrmts | $20,000.0 | $20,000.0 |
| | **Drinking Water** | | |
| 8 | PWSS | $72,500.0 | $90,000.0 |
| 9 | UIC | $10,000.0 | $10,500.0 |
| | **Hazardous Waste** | | |
| 10 | H.W. Financial Assistance | $97,049.7 | $98,298.2 |
| 11 | Underground Storage Tanks | $10,037.2 | $10,544.7 |
| | **Pesticides & Toxics** | | |
| 12 | Pesticides Program Implementation | $15,082.1 | $12,814.6 |
| 13 | Lead Grants | $12,500.0 | $12,500.0 |
| | **Multimedia** | | |
| 14 | Pollution Prevention | $5,999.5 | $5,999.5 |
| 15 | Pesticides Enforcement | $16,133.6 | $16,133.6 |
| 16 | Toxics Enforcement | $6,150.0 | $6,486.2 |
| 17 | Indian General Assistance Program | $15,000.0 | $28,000.0 |
| | **Total - State & Tribal Grants** | **$658,000.0** | **$674,206.9** |

NOTE: All of the above programs are eligible for Performance Partnership Grants.

### CUTTING FEDERAL BUREAUCRACY

Question: What assurances can you give me that EPA will cut its federal bureaucracy before the actual delivery of programs in the states are cut through grant reductions so that the current level of services are not required with less money?

Answer: The President's FY 1997 request of $674,206,900 for state and tribal program grants reflects an increase of $16,206,900 over FY 1996. Beginning with the FY 1996 Budget, these programs have been in a different appropriation account from the Agency's operating programs. Appropriations law prohibits the movement of funds between appropriation accounts. Therefore, if Congress increases or decreases funding in one account, EPA cannot apply those changes to another account. Unlike past years, the Agency does not have the authority to "choose" between its operating programs and state grants programs when applying Congressionally-directed changes to its budget request.

## FLEXIBILITY TO STATES

Question: Since EPA has the ability to give the states more flexibility in setting priorities and allocating program dollars within EPA program categories, in effect a block grant approach, what assurances can you give me that they will be able to pursue such an approach without encumbrance of micro-management by EPA? How can you assure states will have the flexibility to make resource allocation decisions (sic) make sense to the state?

Answer: EPA is pleased to report that we have developed guidance to implement the Performance Partnership Grant (PPG) program and that two performance partnership agreements have already been signed. The PPG guidance assures flexibility with accountability. EPA shared the draft guidance with states for comment, and they are supportive of this approach.

The results-oriented accountability features of PPGs allow states to define problems and program strategies in terms which make sense to them, while maintaining essential adherence to federal laws, accountability to the public, and balance with national environmental objectives and standards.

## REINVENTING REGULATORY POSTURE ON DRINKING WATER

Question: What are your accomplishments to date and your expectations for the agency's ability to fulfill the commitment to refocus EPA's efforts on priority areas and to review the appropriateness of existing regulations?

Answer: In the spring of 1995 we had a series of stakeholder meetings covering monitoring, regulation development, small systems and a number of other issues.

The impact of monitoring requirements on small communities nationwide as well as in the State of Montana was the driving force for the chemical monitoring reform effort underway in the drinking water program. This effort, a crucial component of the drinking water regulatory reinvention initiative, will streamline the drinking water monitoring requirements for 64 chemicals that may occur in the source water of public water systems. The core provision of the chemical monitoring reform rule changes the focus from a federal "one approach fits all" to a State-based, risk-oriented approach. This revised rule will provide States with the flexibility to establish system-specific sampling frequencies based on the vulnerability of the system. That is, monitoring requirements for these 64 chemicals will be targeted to those systems that States determine to be at risk of contamination and the State will set the frequency of sampling for each system. Systems that are neither contaminated nor at risk of contamination will be required to take only one sample every five years. EPA expects that most small systems will fall into this category and, in turn, will benefit from the sampling burden reduction.

A draft chemical monitoring reform rule was distributed to stakeholders for comment in November 1995; revisions are in progress and a final draft proposed rule is scheduled to be published in the fall of 1996.

The regulation development schedule that EPA is now operating under is a result of agreements negotiated with plaintiffs in federal court. We are hoping to re-negotiate new schedules which would slow the pace of additional requirements. Congress is also considering legislation that would reduce the number of regulations EPA is mandated to develop. Currently, the requirement is for us to set 25 new standards every three years.

We are also developing a number of other programmatic changes that would benefit small systems in addition to the monitoring reform discussed above. These include a report from the National Academy of Sciences on improving potable water service for small communities. We are also developing a technology verification program in conjunction with industry and other interested parties that will hopefully speed and simplify the approval of treatment technologies for those small systems that need them. In July we are gathering a group of outside experts to discuss how to better estimate the economic costs and benefits of our regulations.

## CLEAN AIR AMENDMENTS

Question: As you know, EPA requires a 40 percent match for the federal grant. EPA's legal staff made a determination that operating permit fees cannot be used for this match, which has caused problems for Montana and a number of other smaller states in meeting the match requirement. EPA has provided for a three-year waiver from the match in order to allow states time to develop match money, and Montana has applied for the waiver.

While Montana may be able to eventually come up [with] additional match monies from other sources, the State of Montana doesn't know yet if that is possible, and if they can come up with enough match money for the current level of grant money. Operating permit fees are clearly state monies but disallowing them for match purposes has the potential effect of reducing federal assistance to states if they cannot come up with enough match.

Since this position is based upon EPA interpretation of the federal statutes intended to allow the use of Title V fees for match, is there any chance that EPA will revisit its position on this requirement and its possible impact on Montana and other smaller states?

Answer: The Agency appreciates the difficulty that Montana and other States are facing in meeting these matching requirements. This issue has been thoroughly examined several times since the passage of the 1990 amendments to the Clean Air Act. We are unable to find anything in the Act which would provide authority for a State to use title V fees to meet the cost sharing requirement of Section 105 grants. In Sections 502(b)(3)(A) and (C), the Clean Air Act requires that sufficient fees shall be collected to cover all the costs of implementing an operating permit program and that such fees shall be utilized only for the purpose of implementing that program. This means that while operating permit activities are included in the overall air pollution control program effort, the costs for performing those activities may not be included within the program for which Federal grant support is being obtained. That is, Section 105 grant funds cannot be used to fund operating permit activities and operating permit program fees cannot be used for Section 105 grant related activities.

The Agency has used every available means of providing relief to the States from these statutory constraints. These include, in addition to the three-year waiver, the possible deferral of Section 105 cost-sharing until late in the project period, the use of Section 105 grants to fund development of Title V permit programs prior to program approval ("ramp-up" activities), and the use of state permit fees generated during "ramp-up" to satisfy the 105 cost-sharing requirement. These remedies represent the maximum flexibility allowed under the Act.

## NEW NON-ATTAINMENT AREAS

Question: I understand EPA is considering revising the National Ambient Air Quality Standard (NAAQS) for ozone. I also understand EPA is considering a new more restrictive standard that would also allow fewer accedences. In addition, such a restrictive ozone standard would create over 100 new ozone non-attainment areas.

Is EPA aware the contemplated standard revision would result in all of these new non-attainment areas? Why would EPA want to create new non-attainment areas with a less flexible standard? Would this create big problems for municipalities all over the country?

Answer: As you know, EPA is required to periodically review national ambient air quality standards (NAAQS) to ensure that they are protective of human health and the environment. The EPA has completed the scientific assessment phase of the review and the resulting assessments have been rigorously reviewed by the Clean Air Scientific Advisory Committee (CASAC), an independent review panel mandated by Congress, and by the public.

This scientific assessment examined more than 3,000 peer-reviewed studies on the health and environmental effects of ozone. The new health studies report that significant effects, such as increased hospital admissions for respiratory causes, are occurring at ozone levels below the existing standards. These new data also indicate that healthy individuals may experience increased respiratory symptoms such as chest pain, cough and moderate to heavy reduction in lung function during periods of activity involving exertion. Children are at particular risk because of their increased exposure to ozone while outdoors during summer months.

Based on these assessments and the advice and recommendations of CASAC, EPA is considering revisions to the existing ozone NAAQS to ensure the public health and environment is protected against the effects of ozone. Under consideration is the replacement of the existing 1-hour primary standard with a new 8-hour standard within the range of 0.07 to 0.09 parts per million (ppm) ozone. The EPA is also considering a new form of standard that would provide greater stability and more flexibility than the existing form.

The EPA recognizes, based on analysis of ozone air quality data, that additional areas would not be in attainment with the standard alternatives under consideration. The number of areas would depend on the exact level and form of the standard that is necessary to ensure protection of public health. Potential impacts on municipalities would flow from the State implementation plan requirements that are required under the Clean Air Act to attain the NAAQS, including any mandated Federal measures and the associated control strategies. The EPA is very concerned about the need to minimize the cost of attaining a revised ozone standard and having a flexible, common sense approach to the development of the implementation requirements and control strategies. To this end, EPA has established a Subcommittee of the Clean Air Act Advisory

Committee comprised of representatives from environmental groups, industries, State and local government agencies, and others to assist EPA in developing new strategies for implementing possible new ozone standards. As part of this process, EPA will assess costs and benefits as well as other impacts that might flow from their adoption. This partnership approach will ensure that the appropriate health standard is attained with the minimum of impact.

## PARTICULATE MATTER (PM) STANDARDS

Question: I understand EPA is considering revising the PM standards to include tiny particles, including particles from combustion. Wouldn't such a standard revision be devastating for the energy producing industries? Wouldn't the costs of such a standard revision be enormous with little benefit? Wouldn't this put the entire U.S. in non-compliance?

Answer: Based on revised air quality criteria for particulate matter, EPA is considering a possible new fine particle standard(s) as part of its ongoing review of the national ambient air quality standards (NAAQS) for PM. The EPA is also considering possible changes to the existing $PM_{10}$ 24-hour standard (e.g., either dropping it or revising the form) while maintaining the current annual $PM_{10}$ NAAQS. At this point, EPA has not reached any decisions as to levels or forms of possible new fine particle standard(s) or revisions to the existing standard.

The review of the NAAQS for PM is an extremely rigorous, scientific peer review and public comment process. The air quality criteria document and staff paper are based on thousands of peer-reviewed studies. These documents, before they become the basis for input into any policy decisions, are extensively reviewed by the Clean Air Scientific Advisory Committee (CASAC), an independent review panel mandated by Congress, and by the public. The CASAC has completed its review of both documents and concluded that they provide an adequate basis for making regulatory decisions concerning the PM NAAQS.

Particulate matter, including fine particles, has been linked, alone or in combination with other air pollutants (e.g., ozone), with a number of significant respiratory and cardiovascular-related effects. These effects include increased mortality and aggravation of existing respiratory and cardiovascular disease as evidenced by increased hospitalization, school absences, and increased work loss days.

The EPA is very concerned about minimizing the cost and any other impacts associated with attaining any potential new fine particle standards. To accomplish this, the Subcommittee of the Clean Air Act Advisory Committee that is assisting EPA in developing new strategies for implementing possible new ozone standards is also examining new, flexible and common sense approaches for implementing possible new fine particle standards. Until such strategies are developed and a fine particle monitoring network is put in place, we cannot determine which industries may benefit or be impacted by a fine particle standard.

We have attached a Closure Letter on the Staff Paper for Particulate Matter from CASAC which contains their recommendations.

# LETTER FROM DR. GEORGE T. WOLFF, CHAIR, CLEAN AIR SCIENTIFIC ADVISORY COMMITTEE

June 13, 1996

EPA-SAB-CASAC-LTR-96-008

Honorable Carol M. Browner
Administrator
U.S. Environmental Protection Agency
401 M. Street SW
Washington, DC 20460

Subject: **Closure by the Clean Air Scientific Advisory Committee (CASAC) on the Staff Paper for Particulate Matter**

Dear Ms. Browner:

The Clean Air Scientific Advisory Committee (CASAC) of EPA's Science Advisory Board (SAB) has held a series of public meetings during its peer review of the Agency's draft documents which will form part of the basis for your decision regarding the National Ambient Air Quality Standards (NAAQS) for Particulate Matter (PM). The Committee has held public meetings on December 12-13, 1994 (planning and introductory issues); August 3-4, 1995 (review of the initial draft Criteria Document); December 14-15, 1995 (review of the revised draft Criteria Document and the first draft of the Staff Paper); February 29, 1996 (review of the revised draft Criteria Document - specified chapters only, and the Office of Air Quality Planning and Standards (OAQPS) Risk Assessment Plan); and May 16-17, 1996 (review of the revised draft Staff Paper). The primary Agency draft documents that we have reviewed are the: a) *Air Quality Criteria for Particulate Matter* (the "Criteria Document" prepared by the National Center for Environmental Assessment - Research Triangle Park, NC - ORD), b) *Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information* (the "Staff Paper" prepared by the Office of Air Quality Planning and Standards - Research Triangle Park, NC - OAR), and c) *A Particulate Matter Risk Analysis for Philadelphia and Los Angeles* (draft), 1996, Prepared by Abt Associates for US EPA.

As part of our review process, we have kept you informed of our findings through three letter reports: a) *Clean Air Scientific Advisory Committee (CASAC) Comments on the April 1995 draft Air Quality Criteria for Particulate Matter* (EPA-SAB-CASAC-LTR-95-005; August 30, 1995); b) *Clean Air Scientific Advisory Committee (CASAC) Comments on the November, 1995 Drafts of the Air Quality Criteria for Particulate Matter and the Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information (OAQPS Staff Paper),* (EPA-SAB-CASAC-LTR-96-003, January 5, 1996), and c) *Closure by the Clean Air Scientific Advisory Committee (CASAC) on the draft Air Quality Criteria for Particulate Matter* (EPA-SAB-CASAC-LTR-96-005, March 15, 1996).

The Clean Air Scientific Advisory Committee, supplemented by a number of expert Consultants (hereinafter referred to as the "Panel"), reviewed a first draft of the Staff Paper for Particulate Matter at the December 14 and 15, 1995 meeting in Chapel Hill, NC. At that meeting and in subsequent written comments by individual members which were provided to EPA Staff, the Panel made numerous recommendations for improving the draft document.. The Panel met again on May 16, 1996 in Chapel Hill, NC and on May 17, 1996 in Research Triangle Park, NC to review a revised draft of the Staff Paper and the recommendations contained within the Staff Paper for the level and form of the proposed PM NAAQS. This letter is a summary of our findings and conclusions from that meeting.

It was the consensus of the Panel that although our understanding of the health effects of PM is far from complete, the Staff Paper, when revised, will provide an adequate summary of our present understanding of the scientific basis for making regulatory decisions concerning PM standards. Seventeen of the twenty-one Panel members voted for closure. There were two no votes, one abstention, and one absence. However, most of the members who voted for closure did so under the assumption that the Agency would make significant changes to the next version of the Staff Paper which is due by July 15, 1996 (a court ordered mandate). The desired changes have been articulated to your staff at the meeting and subsequently in writing.

The Panel endorses the EPA Staff's recommendation not to establish a separate secondary PM NAAQS for regulating regional haze and agrees that there is an inadequate basis for establishing a secondary NAAQS to reduce soiling and material damage effects.

The attached table (Table I) summarizes the Panel members' recommendations concerning the form and levels of the primary standards. Although some Panel members prefer to have a direct measurement of coarse mode PM ($PM_{10-2.5}$) rather than using $PM_{10}$ as a surrogate for it, there is a consensus that retaining an annual $PM_{10}$ NAAQS at the current level is reasonable at this time. A majority of the members recommend keeping the present 24-hour $PM_{10}$ NAAQS, at least as an option for the Administrator to consider, although those commenting on the form of the standard strongly recommended that the form be changed to one that is more robust than the current standard. There was also a consensus that a new $PM_{2.5}$ NAAQS be established, with nineteen Panel members endorsing the concept of a 24-hour and/or an annual $PM_{2.5}$ NAAQS. The remaining two Panel members did not think any $PM_{2.5}$ NAAQS was justified. However, as indicated in Table I, there was no consensus on the level, averaging time, or form of a $PM_{2.5}$ NAAQS. At first examination of Table I, the diversity of opinion is obvious and appears to defy further characterization. However, the opinions expressed by those endorsing new $PM_{2.5}$ NAAQS can be classified into three broad categories. Four Panel members supported specific ranges or levels within or toward the lower end of the staff's recommended ranges. Seven Panel members supported specific ranges or levels near, at, or above the upper end of staff's recommended ranges. Eight other Panel members declined to select a specific range or level, but most had comments which appear as footnotes in Table I.

A number of Panel members based their support for a $PM_{2.5}$ NAAQS on the following reasoning: there is strong consistency and coherence of information indicating that high concentrations of urban air pollution adversely affect human health, there are already NAAQS that deal with all the major components of that pollution except $PM_{2.5}$, and there are strong reasons to believe that $PM_{2.5}$ is at least as important as $PM_{10-2.5}$ in producing adverse health effects.

Part of this diversity of opinion can be attributed to the accelerated review schedule. While your staff is to be highly commended for producing such quality documents in such a short period of time, the deadlines did not allow adequate time to analyze, integrate, interpret, and debate the available data on this very complex issue. Nor does a court-ordered schedule recognize that achieving the goal of a scientifically defensible NAAQS for PM may require iterative steps to be taken in which new data are acquired to fill obvious and critical voids in our knowledge. The previous PM NAAQS review took eight years to complete.

The diversity of opinion also reflects the many unanswered questions and uncertainties associated with establishing causality of the association between $PM_{2.5}$ and mortality. The Panel members who recommended the most stringent $PM_{2.5}$ NAAQS, similar to the lower part of the ranges recommended by the Staff, did so because they concluded that the consistency and coherence of the epidemiology studies made a compelling case for causality of this association. However, the remaining Panel members were influenced, to varying degrees by the many unanswered questions and uncertainties regarding the issue of causality. The concerns include: exposure misclassification, measurement error, the influence of confounders, the shape of the dose-response function, the use of a national $PM_{2.5}/PM_{10}$ ratio to estimate local $PM_{2.5}$ concentrations, the fraction of the daily mortality that is advanced by a few days because of pollution, the lack of an understanding of toxicological mechanisms, and the existence of possible alternative explanations.

In recommending that the staff carry out a risk assessment, it was the expectation of CASAC that the risk assessments would narrow the diversity of opinion by evaluating how all of the uncertainties propagate throughout the entire model. However, not all of the uncertainties could be included and the combined effect of all of them could not be examined. The Panel recommended that additional analyses be conducted to present combined uncertainties. However, currently the risk assessments are of limited value in narrowing the diversity of opinion within the Panel.

The Panel is unanimous, however, in its desire to avoid being in a similar situation when the next PM NAAQS review cycle is under way by a future CASAC Panel. The Agency must immediately implement a targeted research program to address these unanswered questions and uncertainties. It is also essential that we obtain long-term $PM_{2.5}$ measurements. CASAC is ready to assist the Agency in the development of a comprehensive research plan that will address the questions which need answers before the next PM review cycle is completed. We understand that your staff is preparing a PM research plan for our review later this summer. We look forward to providing our comments on this important matter.

CASAC recognizes that your statutory responsibility to set standards requires public health policy judgments in addition to determinations of a strictly scientific nature. While the Panel is willing to advise you further on the PM standard, we see no need, in view of the already extensive comments provided, to review any proposed PM standards prior to their publication in the Federal Register. In this instance, the public comment period will provide sufficient opportunity for the Panel to provide any additional comment or review that may be necessary.

Thank you for the opportunity to present the Panel's views on this important public health issue. We look forward to your response to the advice contained in this letter.

Sincerely,

George T. Wolff

Dr. George T. Wolff, Chair
Clean Air Scientific Advisory Committee

## TABLE I
## Summary of CASAC Panel Members Recommendations

(all units $\mu g/m^3$)

| | | $PM_{2.5}$ 24-hr | $PM_{2.5}$ Annual | $PM_{10}$ 24-hr | $PM_{10}$ Annual |
|---|---|---|---|---|---|
| Current NAAQS | | N/A | N/A | 150 | 50 |
| EPA Staff Recommendation | | 18 - 65 | 12.5 - 20 | $150^{13}$ | 40 - 50 |
| | | | | | |
| Name | Discipline | | | | |
| Ayres | M.D. | $yes^{2}$ | $yes^{2}$ | 150 | 50 |
| Hopke | Atmos. Sci. | $20 - 50^{3}$ | 20 - 30 | no | $40 - 50^{4}$ |
| Jacobson | Plant Biologist | $yes^{2}$ | $yes^{2}$ | 150 | 50 |
| Koutrakis | Atmos. Sci. | $yes^{2,5,6}$ | $yes^{2,5,6}$ | no | $yes^{4}$ |
| Lamtz | Statistician | no | $25-30^{7}$ | no | $yes^{2}$ |
| Legge | Plant Biologist | ≥ 75 | no | 150 | 40 - 50 |
| Lippmann | Health Expert | $20 - 50^{3}$ | 15 - 20 | no | 40 - 50 |
| Mauderly | Toxicologist | 50 | 20 | 150 | 50 |
| McClellan | Toxicologist | $no^{8}$ | $no^{8}$ | 150 | 50 |
| Menzel | Toxicologist | no | no | 150 | 50 |
| Middleton | Atmos. Sci. | $yes^{2,3,12}$ | $yes^{2,3}$ | $150^{3,13}$ | 50 |
| Pierson | Atmos. Sci. | $yes^{2,9}$ | $yes^{2,9}$ | $yes^{4}$ | $yes^{4}$ |
| Price | Atmos. Sci./ State Official | $yes^{3,10}$ | $yes^{10}$ | $no^{3,4}$ | $yes^{4}$ |

## Summary of CASAC Panel Members Recommendations

(all units μg/m³)

| | | $PM_{2.5}$ 24-hr | $PM_{2.5}$ Annual | $PM_{10}$ 24-hr | $PM_{10}$ Annual |
|---|---|---|---|---|---|
| Current NAAQS | | N/A | N/A | 150 | 50 |
| EPA Staff Recommendation | | 18 - 65 | 12.5 - 20 | 150[13] | 40 - 50 |
| | | | | | |
| Shy | Epidemiologist | 20 - 30 | 15 - 20 | no | 50 |
| Samet[1] | Epidemiologist | yes[2,11] | no | 150 | yes[2] |
| Seigneur | Atmos. Sci. | yes[3,5] | no | 150[13] | 50 |
| Speizer[1] | Epidemiologist | 20 - 50 | no | no | 40 - 50 |
| Stolwijk | Epidemiologist | 75[7] | 25-30[7] | 150 | 50 |
| Utell | M.D. | ≥65 | no | 150 | 50 |
| White | Atmos. Sci. | no | 20 | 150 | 50 |
| Wolff | Atmos. Sci. | ≥75[3,7] | no | 150[3] | 50 |

[1] not present at meeting; recommendations based on written comments

[2] declined to select a value or range

[3] recommends a more robust 24-hr. form

[4] perfers a $PM_{10-2.5}$ standard rather than a $PM_{10}$ standard

[5] concerned upper range is too low based on national $PM_{2.5}/PM_{10}$ ratio

[6] leans towards high end of Staff recommended range

[7] desires equivalent stringency as present $PM_{10}$ standards

[8] if EPA decides a $PM_{2.5}$ NAAQS is required, the 24-hr. and annual standards should be 75 and 25 μg/m³, respectively with a robust form

[9] yes, but decision not based on epidemiological studies

[10] low end of EPA's proposed range is inappropriate; desires levels selected to include areas for which there is broad public and technical agreement that they have $PM_{2.5}$ pollution problems

[11] only if EPA has confidence that reducing $PM_{2.5}$ will indeed reduce the components of particles responsible for their adverse effects

[12] concerned lower end of range is oo close to background

[13] the annual standard may be sufficient; 24-hr level recommended if 24-hour standard retained

## NOTICE

This report has been written as part of the activities of the Science Advisory Board, a public advisory group providing extramural scientific information and advice to the Administrator and other officials of the Environmental Protection Agency. The Board is structured to provide balanced, expert assessment of scientific matters related to problems facing the Agency. This report has not been reviewed for approval by the Agency and, hence, the contents of this report do not necessarily represent the views and policies of the Environmental Protection Agency, nor of other agencies in the Executive Branch of the Federal government, nor does mention of trade names or commercial products constitute a recommendation for use.

## TOXIC REDUCTION INVENTORY

Question: I understand the Administration is in the process of revising the Toxic Reduction Inventory (TRI) rules under the Community Right to Know law. I also understand EPA is considering applying TRI requirements to oil and gas exploration and production facilities.

Does such a revision make sense when most of these facilities are in isolated areas far from human habitation and when emissions from such facilities are minuscule? Why would EPA consider including these facilities and imposing such a huge paper work burden on an already hard hit industry? Where is EPA in the TRI rulemaking process?

Answer: The Administration firmly believes that providing Americans with information about the presence and release of toxic chemicals in their communities is vital in making the public better able to engage in an informed way in environmental decision making. Further, TRI data allows interested parties (including industry) to establish credible pollution prevention baselines, set realistic goals for environmental progress and to measure progress over time.

As such, expanding TRI is an important goal of the Administration and on June 26 of this year, EPA published a proposal to expand the universe of industrial sectors required to report TRI information. However, oil and gas exploration and production facilities were not included in this proposal. In part, this industrial sector was excluded because related exploration and production activities may occur over significantly large geographic areas, raising several novel policy issues.

EPA will engage in a public dialogue with interested stakeholders prior to deciding whether to propose extending the TRI reporting requirements to oil and gas exploration and production facilities.

## GROWTH OF AGENCY BUDGET VS ORD BUDGET

Question: I am disappointed in some of the priorities set by EPA. One area of particular interest is R&D and Science and Technology. I believe EPA needs to change its mind-set. Instead of concentrating on regulatory efforts and fining folks, they should concentrate on providing help to communities on how to comply with our environmental laws.

Over recent years, EPA's budget has grown. But, the R&D account has not. What is the percentage of growth for the entire EPA budget for the last five years? How does this compare to the percentage of growth for the Science and Technology account (formerly the R&D account)?

Answer: The following table shows the percentage change in the Office of Research and Development (ORD) and the total Agency budget. Percentages provided are based on total budgets for five fiscal years (1993 - 1997).

**Change in Agency vs ORD Budget**

| Organization | Change from Previous Year<br>FY 94 | FY 95 | FY 96 | FY 97 |
|---|---|---|---|---|
| ORD | 5.8% | -2.2% | -12.6% | 17.1% |
| EPA | -0.3% | -5.3% | -0.4% | 6.2% |

## AVOIDING DUPLICATE RESEARCH EFFORTS

Question: I am concerned about duplicate efforts by different parts of the government. What efforts are you taking to use funding more efficiently and to avoid duplicate efforts between agencies and departments?

Answer: With its broad environmental mission and limited resources for research, EPA has always sought to take advantage of the expertise and related scientific work of other agencies and departments. In recent years, EPA has participated on the Committee on Environment and Natural Resources (CENR). CENR, one of nine committees established by the Office of Science and Technology Policy in the Executive Office of the President, is charged with coordinating federally-funded environmental and natural resources research and development. In formulating its annual budgets, EPA considers the multi-agency, multi-discipline priorities that CENR established in its March 1995 strategy *Preparing For The Future Through Science And Technology: An Agenda For Environmental and Natural Resources Research.*

Another example of EPA's action to avoid duplicate research efforts is the risk-based priority-setting process that the Office of Research and Development (ORD) used to select its FY 1997 priorities. An explicit step in this process was to exclude from further consideration for EPA funding any research projects where ORD would not make a significant contribution because other research organizations have ongoing programs and expertise in the area. This step was one of several considerations that led to EPA's reduced funding for research in a number of program areas: global change; tropospheric ozone; high performance computing; lead; biotechnology; air toxics; Superfund; and advanced manufacturing.

As a third example of EPA's efforts to use funding more efficiently and avoid duplicate research efforts, this spring, ORD's senior managers initiated a series of visits to the national laboratories operated by the Department of Energy. During such visits, participants from both organizations presented their respective research programs and discussed opportunities for coordinating their efforts.

## RESEARCH ON ENERGY EFFICIENT TECHNOLOGIES

Question: One example would be the energy efficient technologies and work being done at DOE and EPA. Can you explain why the research at EPA is necessary in light of the work being done at DOE?

Answer: EPA is not currently performing research designed to specifically address the development of energy efficient technologies at this time.

## EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH (EPSCoR)

Question: One program which has done a lot for my state and which has produced very good science is the EPSCoR program. We have tried to get a program going in EPA, but with limited success. Why haven't you been willing to do more with EPSCoR?

Answer: EPA has participated in the EPSCoR program since fiscal year 1991. The initial EPSCoR resources were used to fund planning grants in 18 states and Puerto Rico. EPA first solicited research proposals in FY 1993. To date, $3,750,000 have been awarded under this program to support research in 10 EPSCoR states. These resources stimulated almost $6,000,000 in matching funds, for a total contribution of $9,309,080. Approximately $1,000,000 of FY 1996 funds are available to support additional projects.

In addition, EPSCoR participants have the opportunity to compete on an equal basis in the expanded Science to Achieve Results (STAR) program. In FY 1995, EPA implemented the STAR program that complements other competitive opportunities for research funding. Star has three major components. First, STAR targets focused requests for applications (RFAs) at specific research topics that address the science needs of EPA and are investigator-initiated research. Second, exploratory research is also investigator-initiated research in broad areas relevant to EPA but not specifically targeted. Third, is the graduate fellowship program which provides support for masters and doctoral students in environmental sciences and engineering. Scientists and engineers in all eligible institutions across the Nation are invited to make proposals. Competitions for these grants are announced widely through the Federal Register, the Internet, and university and scientific organizations. FY 1996 funding for STAR is $84,300,000.

## CRITERIA FOR ALLOCATION OF EPSCoR RESOURCES

Question: What is the status of the $1 million appropriated in FY 1996?

Answer: A request for applications is currently being developed which will be issued by the end of July, 1996. In order to enable prospective applicants to have adequate time to respond, we will set a deadline for submission of approximately October 31, 1996.

Question: What criteria are you using to allocate it?

Answer: Review criteria have not been finalized as of yet for the FY 1996 solicitation. However, they will very closely resemble the review criteria for the competitive investigator-initiated grants program which emphasizes the quality and utility of the research proposed, the qualifications of the key personnel to do the work proposed, and the adequacy and appropriateness of the facilities and equipment available to investigators.

## GRADUATE FELLOWSHIP PROGRAM

Question: What are your plans for the graduate fellowship program in FY 1996?

Answer: On October 31, 1995, EPA issued a request for applications for the graduate fellowship program. Just under 1,000 applications were received. After an intensive merit review process, the pool of applications was narrowed down to approximately 150 finalists. From this group, 100 awards will be made. According to the program guidelines, developed by the Office of Research and

Development, the awards will be apportioned as follows: Two-thirds of the awards will be made to doctoral-level students and one-third will go to masters-level students. Within each of these categories, two-thirds of the awards will be made to continuing students, with one-third going to entering masters or doctoral students. All 100 of the awards will be in place by the end of August, 1996.

## LIST OF FELLOWSHIPS

Question: Please provide a list, by state, of the number of fellowships awarded and a list, by state, of where the fellowships were used. As you know, some of us from the rural states are concerned about the fact that fellowships can be taken to any institution, which makes it difficult for us to develop good graduate programs.

Answer: A list of the graduate fellowships awarded for the 1995-1996 academic year, by state, is attached. Awards for the 1996-1997 academic year have not yet been completed.

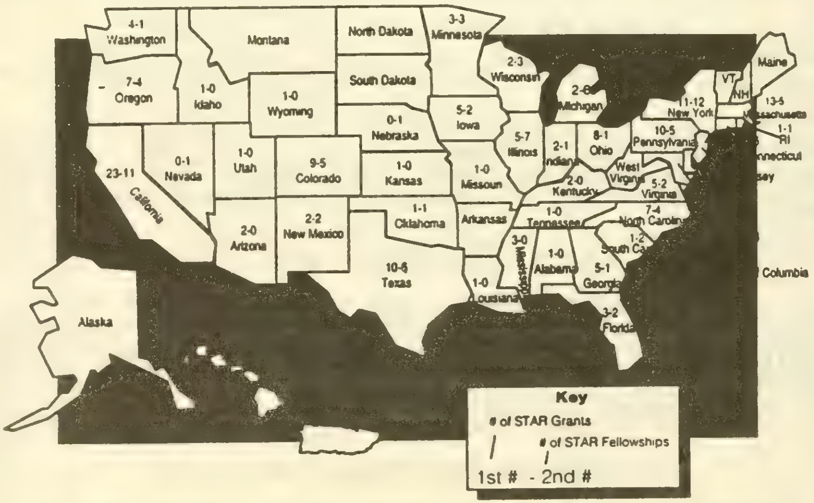
Appendix 3

**ORD's New Grant* and Fellowship Awards by State**

## FY95 STAR Program

### Office of Research and Development

### National Center for Environmental Research and Quality Assurance



STAR grant awards for FY95, 172 (new), $33,022,847 million

STAR fellowship awards FY95, 100 (new), $2,993,071 million

*New awards refer to grant applications awarded for the first time in this fiscal year, FY 95. The numbers shown above do not include awarded grants now in their second or third year.

## National Center for Environmental Research and Quality Assurance
## Graduate Fellowships for the 1995-1996 Academic Year

STATE UNIVERSITY APPLICANT DEPARTMENT DISCIPLINE DEGREE SOUGHT

| STATE | UNIVERSITY | APPLICANT | DEPARTMENT | DISCIPLINE | DEGREE SOUGHT |
|---|---|---|---|---|---|
| CA | California State University | Ellison, Homer O. | Department of Biological Sciences | Ecology | MS |
| CA | California, U. of, Berkeley | Schuler, Andrew J. | Department of Civil Engineering | Engineering | Ph.D. |
| CA | California, U. of, Berkeley | Holzberg, Steven P. | Department of Environmental Science, Policy & Mgmt. | Health | Ph.D. |
| CA | California, U. of, Berkeley | Boyd, William C. | Energy and Resources Group | Social Sciences | Ph.D. |
| CA | California, U. of, Davis | Loge, III, Frank J. | Department of Civil and Environmental Engineering | Engineering | Ph.D. |
| CA | California, U. of, Irvine | Pearson, Alison C. | Department of Community and Environmental Medicine | Health | Ph.D. |
| CA | California, U. of, Riverside | Dobo, Krista L. | Environmental Toxicology Graduate Program | Health | Ph.D. |
| CA | California, U. of, San Diego | Francis, Christopher A. | Scripps Institute of Oceanography | Ecology | Ph.D. |
| CA | California, U. of, Santa Barbara | Evens, Terence J. | Department of Biology | Ecology | Ph.D. |
| CA | Stanford University | Abrams, Robert H. | Department of Geology & Environmental Science | Earth | Ph.D. |
| CA | Stanford University | Ziegler, Alan D. | Department of Geological and Environmental Sciences | Earth | Ph.D. |
| CA | Stanford University | Cunningham, Jeffrey A. | Department of Civil Engineering | Engineering | Ph.D. |
| CO | Colorado State University | Brechtel, Fredrick J. | Department of Atmospheric Science | Earth | Ph.D. |
| CO | Colorado State University | Champlin, Tory L. | Department of Civil Engineering | Engineering | Ph.D. |
| CO | Colorado, U. of | Carson, Katherine S. | Department of Economics | Social Sciences | MA |
| CO | Colorado, U. of | Miller, John B. | Department of Chemistry | Chemistry | Ph.D. |
| CO | Colorado, U. of | Bowling, David R. | Dept. of Environ., Population, & Organismic Biology | Earth | Ph.D. |
| CT | Connecticut, U. of | Goldstein, Paul Z. | Department of Ecology and Evolutionary Biology | Ecology | Ph..D. |
| CT | Connecticut, U. of | Rolfhus, Kristofer R. | Department of Marine Science | Earth | Ph.D. |
| CT | Connecticut, U. of | Craddock, Cheryl L. | Department of Ecology and Evolutionary Biology | Ecology | Ph.D. |
| CT | Yale University | Beard, Karen H. | School of Forestry & Environmental Sciences | Ecology | MS |
| CT | Yale University | Kull, Christian A. | School of Forestry and Environmental Studies | Earth | Ph.D. |
| CT | Yale University | Meyerson, Frederick A. | School of Forestry and Environmental Studies | Ecology | Ph.D. |
| FL | Florida State University | Byrd, Tracy C. | Department of Geology | Earth | MS |
| FL | Florida, U. of | Crain, David A. | Department of Zoology | Ecology | Ph.D. |
| GA | Georgia, U. of | Schoeffner, Daniel J. | Department of Pharmacology and Toxicology | Health | Ph.D. |
| IA | Iowa State University | Simmons, Carol L. | Department of Entomology | Ecology | MS |
| IA | Iowa State University | Kruger, Ellen L. | Department of Entomology | Health | Ph.D. |
| IL | Chicago, U. of | Myers, Tanya L. | Department of Chemistry | Chemistry | Ph.D. |
| IL | Chicago, U. of | Shonle, Irene K. | Department of Ecology and Evolution | Ecology | Ph.D. |
| IL | Chicago, U. of | Mendelsohn, Betsy T. | Department of History | Social Science | Ph.D. |

| STATE | UNIVERSITY | APPLICANT | DEPARTMENT | DISCIPLINE | DEGREE SOUGHT |
|---|---|---|---|---|---|
| IL | Illinois, U. of, Chicago | Kenski, Donna M. | Environmental and Occupational Health Sciences | Chemistry | Ph.D. |
| IL | Illinois, U. of, Urbana | Brent, Robert N., | Department of Civil Engineering | Ecology | MS |
| IL | Illinois, U. of, Urbana | Dillner, Ann M. | Department of Civil Engineering | Engineering | Ph.D. |
| IL | Northwestern University | Wade-Benzoni, Kimberly A. | Department of Organizational Behavior | Social Sciences | Ph.D. |
| IN | Indiana University | Schmucker,Mary B. | School of Public and Environmental Affairs | Social Sciences | MS |
| MA | Massachusetts Institute of Technology | Zhang, Jie | Department of Earth, Planetary & Atmospheric Sciences | Earth | Ph.D. |
| MA | Massachusetts Institute of Technology | Hart, Constance A. | Department of Biology | Ecology | Ph.D. |
| MA | Massachusetts Institute of Technology | Adamkiewicz, Gary | Department of Chemical Engineering | Engineering | Ph.D. |
| MA | Massachusetts Institute of Technology | Hamilton, James A. | Department of Civil and Environmental Engineering | Social Science | S.M. |
| MA | Massachusetts, U. of | Pines, David S. | Department of Civil and Environmental Engineering | Engineering | Ph.D. |
| MD | Johns Hopkins University | Ehlers, Laura J. | Department of Geography & Environmental Engineering | Engineering | Ph.D. |
| MD | Maryland, U. of, College Park | Warner, Kimberly A. | Marine, Estuarine & Environmental Sciences Program | Ecology | Ph.D. |
| MI | Michigan State University | Yavich, Aleander A. | Department of Civil and Environmental Engineering | Engineering | MS |
| MI | Michigan State University | Tay, Eugene Michael | Program in Epidemiology | Health | MS |
| MI | Michigan, U. of, Ann Arbor | Kibbey, Tohren C. | Department of Civil and Environmental Engineering | Engineering | MS |
| MI | Michigan, U. of, Ann Arbor | Li, Susanna P. | Department of Civil and Environmental Engineering | Engineering | MS |
| MI | Michigan, U. of, Ann Arbor | McEuen, Amy B. | School of Natural Resources and Environment | Ecology | Ph.D. |
| MI | Michigan, U. of, Ann Arbor | Santoro, Nicholas | Department of Biological Chemistry | Health | Ph.D. |
| MN | Minnesota, U. of | Cronlund, Sarah L. | Department of Ecology, Evolution, & Behavior | Ecology | MS |
| MN | Minnesota, U. of | Reinke, Patricia H. | Department of Environmental and Occupational Health | Earth | Ph.D. |
| MN | Minnesota, U. of | Otterson, Julie R. | Department of Ecology Evolution and Behavior | Ecology | Ph.D. |
| NC | Duke University | Andrews, Jeffrey A. | Department of Botany | Ecology | Ph.D. |
| NC | Duke University Medical Center | Reuther, Gary W. | Department of Pharmacology | Health | Ph.D. |
| NC | North Carolina State University | Penmetsa, Phanendrakumar V. | Department of Toxicology | Ecology | Ph.D. |
| NC | North Carolina, U. of, Chapel Hill | Raynor, Peter, C. | Department of Environmental Sciences & Engineering | Engineering | Ph.D. |
| NE | Nebraska-Lincoln, U. of | Raschko-Mueller, Jennifer L. | Department of Mathematics and Statistics | Mathematics | Ph.D. |
| NJ | Rutgers University | Dey, Markus P. | Department of Pharmacology and Toxicology | Health | Ph.D. |
| NJ | Rutgers University | Hamel, Stephanie L. | Exposure Measurement & Assessment Division | Health | Ph.D. |
| NM | New Mexico Highlands University | Presley, Richard W. | Department of Chemistry | Chemistry | MS |
| NM | New Mexico State University | Strand, Allan E. | Department of Biology | Ecology | Ph.D. |
| NV | Nevada, U. of, Reno | Marchand, Eric A. | Department of Civil Engineering | Engineering | MS |
| NY | Buffalo, U. of | DiTommaso, Jill E. | Department of Civil Engineering | Engineering | MS |
| NY | Clarkson University | Marsteiner II, Edward L. | Department of Civil and Environemtal Engineering | Engineering | MS |
| NY | Cornell University | Carpi, Anthony | Field of Environmental Toxicology | Chemistry | MS |
| NY | Cornell University | Brown, Geoffrey A. | Department of Soil, Crop & Atmospheric Science | Chemistry | Ph.D. |
| NY | Cornell University | Glueck, Susan B. | Department of Entomology | Ecology | Ph.D. |
| NY | Cornell University | Sobczak, William V. | Department of Ecology and Systematics | Ecology | Ph.D. |
| NY | Cornell University | Nelson, Yarrow M. | School of Civil and Environmental Engineering | Engineering | Ph.D. |
| NY | Cornell University | VanderGheynst, Jean S. | Department of Agricultural and Biological Engineering | Engineering | Ph.D. |

| STATE | UNIVERSITY | APPLICANT | DEPARTMENT | DISCIPLINE | DEGREE SOUGHT |
|---|---|---|---|---|---|
| NY | Cornell University | Bayer, Lorna E. | Department of Psychology | Social Science | Ph.D. |
| NY | New York University Medical Center | Matheson, Joanna M. | Program of Environmental Health Science | Health | Ph.D. |
| NY | SUNY at Buffalo | Russell, Kevin T. | Department of Civil Engineering | Engineering | MS |
| NY | SUNY at Stony Brook | Griscom, Sarah B | Marine Sciences Research Center | Ecology | Ph.D. |
| OH | Cincinnati, U. of | Blasio, Christopher J. | Department of Environmental Health | Earth | MS |
| OK | Oklahoma, U of | Pearce, Terri A. | Department of Pharmacology and Toxicology | Health | Ph.D |
| OR | Oregon State University | Spicer, Rachel | Department of Forest Products & Forest Science | Ecology | MS |
| OR | Oregon State University | Hairston, Anne B. | Department of Forest Engineering | Earth | Ph.D |
| OR | Oregon State University | Scheck, Heather J. | Department of Botany and Plant Pathology | Ecology | Ph.D. |
| OR | Oregon State University | Purdy, Kathleen G. | Department of Statistics | Mathematics | Ph.D. |
| PA | Carnegie Mellon University | Chess, Karen L. | Department of Mechanical Engineering | Engineering | Ph.D. |
| PA | Carnegie Mellon University | Welch, Edward S. | Department of Social and Decision Sciences | Social Sciences | Ph.D. |
| PA | Pennsylvania State University | Parson, Shane C. | Department of Agricultural and Biological Engineering | Engineering | MS |
| PA | Pittsburgh, U. of | Guelcher, Scott A. | Department of Chemical Engineering | Engineering | MS |
| PA | Pittsburgh, U. of | Goldman, Radoslav | Department of Environmental and Occupational Health | Health | Ph.D. |
| RI | Rhode Island, U. of | Audette, Charles T. | Department of Botany | Ecology | MS |
| SC | Clemson University | Payne, Tamara H. | Department of Mathematical Sciences | Mathematics | MS |
| SC | South Carolina, U. of | Schelkat, Christian E. | Department of Environmental Health Sciences | Ecology | Ph.D. |
| TX | Rice University | Bradford, John H. | Department of Geology and Geophysics | Earth | MA |
| TX | Rice University | Lahsen, Myanna H. | Department of Anthropology | Social Sciences | Ph.D. |
| TX | Texas A&M University | Wells, Mona C. | Department of Chemistry | Chemistry | Ph D |
| TX | Texas, U. of, Austin | Boughton, David A. | Department of Zoology | Ecology | Ph.D. |
| TX | Texas, U of, Austin | Williamson, Derek G. | Department of Civil Engineering | Engineering | Ph.D. |
| TX | Texas, U. of, Dallas | Gamble, Janet L. | School of Social Sciences | Health | Ph D. |
| VA | Virginia Poly. Tech. Institute | Diz, Harry R. | Department of Civil Engineering | Engineering | Ph.D. |
| VA | William and Mary , College of | Chasey, Michael L | Department of Physical Sciences | Chemistry | MS |
| WA | Washington State University | Call, Douglas R. | Department of Zoology | Ecology | Ph D. |
| WI | Wisconsin, U. of, Madison | Holloway, Susan A. | Water Chemistry Program | Chemistry | Ph D. |
| WI | Wisconsin, U. of, Madison | Fisher, Janet M | Department of Zoology | Ecology | Ph D |
| WI | Wisconsin, U. of, Madison | Ripp, Sharon L | Environmental Toxicology Center | Health | Ph.D. |

## SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

Question: How much did you allocate to SBIRs in FY 1996?

Answer: The FY 1996 Small Business Innovative Research program target is $4,593,300. Funding for this program is mandated as a percentage of Agency research and development. Currently the allocation is 2%.

Question: What were your focus areas?

Answer: The FY 1996 request for proposals focused on, but was not limited to, the following topic areas: drinking water treatment; industrial wastewater; indoor air pollution; air toxic emissions; pollution prevention; treatment and disposal of solid and hazardous wastes; in situ site remediation of contaminated soil, sediments and groundwater.

## IMPACT OF RECENT RETROACTIVE LIABILITY COURT DECISION

Question: There was a very recent court decision on retroactive liability on Superfund. My understanding is the decision used an U.S. Supreme Court decision on retroactive laws. How will this case effect your enforcement under Superfund?

Answer: The question you ask refers to the United States v. Olin Corp. (Southern District of Alabama) Decision May 20, 1996. The following is a summary of the case and its impact:

What the Case is About: This case concerns a chemical plant in McIntosh, Alabama, that was owned and operated by the Olin Corporation, and discharged mercury and chloroform wastes into the wetlands and surface waters flowing into the Tombigbee River. The United States reached an agreement with the Olin Corporation to clean up the groundwater, and brought this action for the purpose of entering the consent decree with Olin in federal district court. When the United States moved to enter the consent decree, the Court (Judge W.R. Hand) requested briefing on whether CERCLA is constitutional in light of the Supreme Court's decision in the United States v. Lopez (1995).

What the Decision is About: Judge Hand's decision interprets Lopez to bar the application of CERCLA to the McIntosh site, on the ground that such an application would exceed Congress' authority under the Commerce Clause of the Constitution. Lopez invalidated the Gun Free Schools Act, a federal statute which prohibited guns in school zones, as exceeding Congress' constitutional authority under the Commerce Clause.

In addition, Judge Hand interpreted another Supreme Court case, United States v. Landgraf (1994), to preclude application of CERCLA's liability provisions to activities that occurred before enactment of CERCLA in 1980. Landgraf held that there was not sufficient indication in the Civil Rights Act of 1991 or its legislative history to show that Congress intended retroactive application of a provision of that statute.

The Effect of the Decision: Judge Hand denied entry of the consent decree and ruled that the United States has no constitutional authority under CERCLA to compel Olin to clean up its McIntosh site. This is the first case in which a federal court has ruled that the United States cannot require a CERCLA cleanup due to lack of constitutional authority, as well as the only federal court to hold that CERCLA liability is not retroactive. 18 previous federal judicial decisions, including 3 decisions by Courts of Appeals, affirmed that CERCLA liability is retroactive and constitutional.

The Effect on Superfund Enforcement: This decision applies only in the Southern District of Alabama and, as noted above, is directly inconsistent with the great body of case law which preceded it. EPA will continue its vigorous implementation of the Superfund Act.

## QUESTIONS SUBMITTED BY SENATOR STEVENS

### MODIFICATIONS TO THE 1994 GENERAL PERMIT

Question: What will you do to ensure that there are no modifications made to the 1994 General Permit, under which Alaska's small miners are currently operating, that might cause more harm than good or which might take some of them by surprise?

Answer: EPA's 1994 general permit for placer mines in Alaska excluded small miners (those with suction dredge intake hoses of less than 4 inches). In response to a petition from environmental groups, EPA proposed (in January of this year) to modify the 1994 permit. The proposed permit included small operators (all suction dredges less than 8 inches). However, in response to comments on the proposed permit, EPA is planning to remove small miners (intake hoses less than 4 inches) from the soon to be issued final permit.

EPA then plans to assess the nature and extent of small placer mine operators in Alaska and consider future regulatory options with respect to this category of operators. In this evaluation, EPA will consider both environmental impacts as well as regulatory burden in connection with small miners. For any future regulatory requirements that may affect small miners, EPA will undertake an appropriate level of outreach to ensure that they have adequate opportunity for participation in the process notice and comment.

### RESULTS OF LEAKING ABOVE GROUND FUEL STORAGE TANKS DEMONSTRATION PROJECT

Question: Last year I raised the Leaking Above Ground Fuel Storage Tanks problem facing our rural communities. We funded a demonstration project in your FY 96 budget. What are the results?

Answer: EPA received $2 million in its April appropriation to support remediation efforts to reduce leaking at above ground storage tanks in rural Alaska. The Agency intends to expeditiously award the demonstration projects which will address leaking storage problems in rural Alaskan communities. EPA is currently working with the National Governor's Association (NGA) and the State of Alaska to finalize the grant application to make sure priority sites are addressed.

### DELEGATION OF NPDES PERMIT PROGRAM IN ALASKA

Question: What could EPA be doing to encourage and assist the State of Alaska to assume delegation of the NPDES permit program in Alaska?

Answer: EPA supports authorization of States to implement the NPDES program. The key components necessary for approval of a State NPDES program are adequate legal authority and resources to run the program, technical permitting requirements at least as stringent and environmentally protective as existing Federal Clean Water Act program requirements and an administrative department or infrastructure in place to assure smooth and effective operation of the program. EPA will be providing NPDES training to State of Alaska staff this summer. The Agency will, of course, be available to consult and support the State if it chooses to develop a State NPDES program submission.

## QUESTIONS SUBMITTED BY SENATOR CAMPBELL

### LETTER FROM NAVAJO NATION TO EPA

Question: EPA is concerned about the impact of the Colorado Ute Water Settlement Act on the Navajo Nation.

(a) Isn't it true that President Hale of the Navajo Nation has written EPA confirming the Navajo's support for the Colorado Ute Tribe settlement and the Animas-LaPlata Project?

Answer: President Hale has not written to EPA regarding the Animas-LaPlata Project. However, we understand that on January 30, 1996, President Hale wrote Interior Secretary Babbitt and did indeed state his view that "the Navajo Nation fully supports and encourages the implementation of the Colorado Ute Indian Water Rights Settlement Act of 1988 and the delivery of water to the Colorado Ute Tribes..." However, Mr. Hale also expressed his concerns about the effects of the proposed Animas-LaPlata Project (ALP) depletions on the Navajo Nation's interest in the San Juan River. Mr. Hale cited the prior Endangered Species Act (ESA) consultation process that resulted in the 1991 biological opinion on ALP which did not include the final blocks of the Navajo Indian Irrigation Project (NIIP) in the environmental baseline of the San Juan River. According to Mr. Hale, "this consultation...took water out of the environmental baseline for NIIP and allocated it to ALP."

### COST FOR STAGE A FACILITIES FOR ALP PROJECT

Question: I also understand that the cost of the ALP project has been cited by EPA as an important concern.

(a) What cost have you determined for the Stage A facilities currently authorized by Fish & Wildlife Service?

(b) Can you confirm that of the proposed Stage A total costs of $245 million, nearly $50 million is allocated for fishery protection and enhancement and $65 million will be contributed by State and local cost sharing?

(c): Would the remaining $131 million be within the ceiling of the existing repayment contract?

(d) Does EPA have any information indicating that the value of water rights in the Four Corners region is going down?

(e) Would the endangered species limitations on water development cause Four Corners' region water rights to increase greatly in value?

Answer: (a) and (b): EPA does not develop nor determine costs for the ALP. However, according to the Bureau of Reclamation's (BR) Animas-La Plata Project Economic and Financial Analyses Update, June 1995, and the Final Supplement to the Final Environmental Statement, construction costs for the Stage A facilities are at least $287 million. We are not aware of the portion of Stage A construction costs that would be contributed by

State and local cost sharing as the Final Cost Sharing Agreement of June 30, 1986 did not specify that part attributable to Stage A facilities.

© EPA is not aware of whether the remaining amount is within the ceiling of the existing repayment contracts.

(d) and (e) Although we do not have any information regarding current trends in the value of water rights in the Four Corners' region, it is generally assumed that the value of water rights depends upon the capital and operating costs of development, location of use, type of use and transferability of these rights. For example, it is uncertain whether the Tribal water rights now associated with the ALP could be transferred off the reservations and out-of-state. However, it is likely the value of these water rights would increase significantly if such transfers were allowed, regardless of the status of the ALP.

## REFERRAL OF ALP PROJECT TO CEQ

Question: I understand that EPA has not specifically identified any important recreational or fishery resource in jeopardy at ALP. Yet, I understand that EPA has threatened a referral of the project to the Council on Environmental Quality (CEQ).

(a) On what basis would such a referral be made?

(b) Have you to date made the specific basis for your referral known to either of the Colorado Ute Tribes or to the Secretary of the Interior?

Answer: A referral to CEQ is made when the Administrator determines that a proposed action is unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA has outlined its concerns with ongoing NEPA analyses (i.e., inadequate consideration of impacts to Navajo water rights and existing water projects, water quality, mitigation, and the impacts associated with the proposed municipal and industrial water uses) in a recent letter to the Tribes. In addition, EPA has recently written to the Bureau of Reclamation regarding ALP, noting our concerns with regard to potential exceedences of the selenium water quality standard, the effects upon Navajo Nation water rights, and the unspecified uses of ALP municipal and industrial supplies.

## ANIMAS-LAPLATA PROJECT, SOUTHWEST COLORADO

## DELAY OF RESPONSE

Question: Regarding the Animas-LaPlata Project in Southwestern Colorado, I would like to ask you a few questions about EPA's letter of May 1, 1996 to the Commissioner of Reclamation asking for an additional 90 days to review the final supplemental environmental impact statement. Let me first turn to the delay caused by the request. What was the delay preventing the EPA from commenting in a timely fashion?

Answer: EPA has a statutory responsibility to review and comment in writing on the environmental impacts of major Federal actions, and to refer the matter to the Council on Environmental Quality if the Administrator finds the matter to be "unsatisfactory from the standpoint of public health or welfare or environmental quality." (Clean Air Act; Section 309). EPA's letter of May 1, 1996 to Commissioner Martinez of the Bureau of Reclamation requested a ninety-day extension of EPA's 25-day deadline for submitting a referral to the Council on Environmental Quality (CEQ) concerning the Animas-LaPlata Project (ALP). In light of EPA policy to refer a matter to CEQ only after every effort to resolve the issue at the agency level has been exhausted, we believe it was prudent to request an extension to allow for continued discussions with the Bureau of Reclamation. It is EPA's intent to work within this timeframe to reach a consensus with the Bureau on the environmental issues raised by the ALP, and hopefully avoiding the need for a referral to CEQ.

## ANIMAS-LAPLATA PROJECT, SOUTHWEST COLORADO

### INVOLVE OF REGION 8 IN PREPARATION OF FZS

Question: Has your staff, and particularly the Region VIII staff, been involved with the preparation of the FZS for the past two years?

Answer: EPA Region VIII staff have worked with the Bureau of Reclamation over the past two years to provide early technical comments and concerns regarding the preparation of the FZS.

## ANIMAS-LAPLATA PROJECT, SOUTHWEST COLORADO

### SECRETARY DIRECTION TO CONSTRUCT PORTION

Question: Did Congress direct the Secretary of the Interior to construct the portions of the Project approved by the U.S. Fish and Wildlife Service "without delay"?

Answer: Section 507 of the 1996 Energy and Water Appropriations Act directs the Secretary of the Interior to "proceed without delay with construction of those facilities in conformance with the final Biological Opinion for the Animas-LaPlata project, Colorado and New Mexico, dated October 25, 1991."

## ANIMAS-LAPLATA PROJECT, SOUTHWEST COLORADO

### EPA's ROLE IN ASSISTING THE DEPARTMENT OF THE INTERIOR

Question: What is EPA's role in assisting the Secretary in carrying out that Congressional directive?

Answer: While there is no specific role identified for EPA in the subject legislation, EPA will continue to work with the Bureau of Reclamation to ensure that the ALP complies with all applicable environmental statutes, and that, pursuant to EPA's role set forth in Section 309 of the Clean Air Act and the CEQ implementing regulations at 40 C.F.R. Part 1504, the ALP project is not environmentally unsatisfactory from the standpoint of public health or welfare or environmental quality.

## ANIMAS-LAPLATA PROJECT, SOUTHWEST COLORADO

### ENVIRONMENTAL IMPACTS OF ANIMAS-LAPLATA PROJECT

Question: In asking for that delay, EPA Region VIII's letter draws a number of conclusions about the FZS. What are the unacceptable environmental impacts of ALP that EPA believes should be avoided? Where are those set out? What documentation do you have to support those assertions?

Answer: EPA has yet to make a final decision regarding the severity of the potential impacts of the ALP. However, we remain concerned over the potential for the ALP to contribute to current water quality problems (i.e., elevated selenium concentrations) in the affected rivers. Moreover, we are concerned over potential impacts to wetlands and other fish and wildlife resources given the uncertainties associated with a yet to be developed mitigation plan. In addition, the FZS does not identify specific uses for over 68,000 acre-feet-year of water allocated for municipal and industrial use. Without a specified use, we remain concerned over the potential for significant environmental impacts.

## ANIMAS-LAPLATA PROJECT, SOUTHWEST COLORADO

### COLORADO OR NEW MEXICO COMMENTS ON ALP EFFECT ON WATER QUALITY

Question: To date, to your knowledge, has the state of Colorado or New Mexico made any negative comments about ALP's effect on water quality in the San Juan River or its tributaries? If so, what documentation supports this?

Answer: The New Mexico Environment Department, in its December 15, 1992 comments to the Bureau of Reclamation regarding the Draft Supplement to the 1980 Final Environmental Statement for the ALP, indicated that the ALP "will likely increase the frequency of water quality standards violations" and that "any increases [of trace elements] caused by the project are unacceptable." This position was reiterated by the Attorney General of New Mexico, by letter dated March 16, 1995, to the Commissioner of the Bureau of Reclamation.

## ANIMAS-LAPLATA PROJECT, SOUTHWEST COLORADO

### ALP WATER QUALITY STANDARD VIOLATION

Question: Given that New Mexico water quality standards are already being violated, is Colorado water development prohibited unless it fixes the problem in New Mexico? Will ALP help the problem in New Mexico?

Answer: Without trying to make any broad generalizations regarding the potential impacts of unspecified water development proposals in Colorado on water quality in New Mexico, Clean Water Act permits for a project in Colorado would have to ensure that the project would not cause or contribute to violations of water quality standards. Section 313 of the Clean Water Act makes this requirement applicable to federal facilities, as well. As noted earlier, the state of New Mexico has indicated that instead of improving water quality, ALP "will likely increase the frequency of water quality standards violations."

## ANIMAS-LAPLATA PROJECT, SOUTHWEST COLORADO

### REGION 8 AND THE NAVAJO NATION

Question: I understand that the Region VIII staff tried to solicit opposition to the ALP from the Navajo Nation. Is that the proper role of EPA to try to pit tribe against tribe?

Answer: It is EPA's practice to work cooperatively with all of the stakeholders involved with a particular issue. In addition, for projects involving Native American interests, EPA has a trust responsibility for federally-recognized Indian Tribes. With regard to the ALP, the Navajo Nation has written a number of letters expressing concerns with the Project. Consequently, EPA Region VIII staff determined that it was appropriate to meet with representatives of the Navajo Nation to discuss the Nation's concerns.

## ANIMAS-LAPLATA PROJECT, SOUTHWEST COLORADO

### EPA's ROLE IN ALLOCATION TRIBAL WATER

Question: Is it EPA's job to resolve the allocations of water between the Navajo Nation and the two Colorado Ute tribes?

Answer: EPA is not responsible for resolving allocations of water among Tribes. However, EPA believes it is essential that information regarding all water allocations in a basin that may affect a proposed water development project be included in the Environmental Impact Statement for that proposed project to determine the cumulative direct and indirect impacts as required by NEPA.

## ANIMAS-LAPLATA PROJECT, SOUTHWEST COLORADO

### FINAL SUPPLEMENTAL EIS

Question: Given that the Project is being built to satisfy tribal water rights claims to meet future needs, does the FEIS have to describe all of the Tribe's future water uses and the impacts of those uses?

Answer: The Council on Environmental Quality's regulations for implementing the National Environmental Policy Act require that an Environmental Impact Statement (EIS) include a discussion of the environmental impacts of the proposed action and its alternatives (40 CFR 1502.16). This discussion must include an evaluation of both direct and indirect effects. Indirect effects are defined as those effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Consequently, in the case of the ALP, it is clear that construction of the ALP will result in new future water uses by the Tribes, and that the reasonably foreseeable effects of any such uses must be evaluated.

## ANIMAS-LAPLATA PROJECT, SOUTHWEST COLORADO

### EPA AUTHORITY TO INSIST ALTERNATIVES

Question: Congress in 1986 and 1995 directed that construction of Animas-LaPlata Project was the way to settle the Colorado Ute tribes water rights. What authority does the EPA have to insist that alternatives to a project such as ALP must be studied, in light of those directives?

Answer: NEPA requires consideration of alternatives to a proposed action so that the public and public officials, including the Congress, can evaluate the full range of options available to them. For example, the Council on Environmental Quality's guidance regarding the appropriate range of alternatives to be evaluated in an Environmental Impact Statement (EIS) clearly states that "[A]lternatives that are outside the scope of what Congress has approved or funded must still be evaluated in the EIS if they are reasonable, because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies." (46 Fed. Reg. 18026; March 23, 1981) Given this guidance, EPA believes it is appropriate for the Bureau of Reclamation to include in its EIS an examination of alternatives to the current formulation of the ALP.

# QUESTIONS SUBMITTED BY SENATOR MIKULSKI

## USING RISK ANALYSIS TO SELECT SCIENTIFIC PRIORITIES

Question: As you know, the 1995 NAPA study suggested that EPA should use comparative risk analyses to select its scientific priorities. How have you implemented this NAPA recommendation? Please give specific examples.

Answer: The Office of Research and Development (ORD) used a risk-based process to identify and select its FY 1997 priorities. In this process, ORD: 1) Sought input from a wide variety of sources inside and outside of EPA regarding major directions and priorities for EPA's research program; 2) Applied a series of human health, ecological health, and risk management criteria to compare the topics according to their potential to support effective risk reduction; 3) Excluded topics where ORD is unable to make a significant contribution, such as topics for which other research organizations have the responsibility and expertise; 4) Within the remaining topics, identified the research needs within each component of the risk paradigm (effects, exposure assessment, risk characterization, and risk management); and 5) Gave priority to research that will make the greatest contribution to reducing the uncertainty associated with risk characterization, or will improve the effectiveness of risk management.

This risk-based approach to priority-setting indicated three general scientific areas where ORD has reduced or eliminated funding: exposure and effects research in areas of low risk; risk reduction research in areas of low risk; and routine measurements or monitoring where research and development have been completed.

Applying risk-based priority-setting led to specific reductions in ORD's FY 1997 budget request. Examples are the reductions in funding for research in nine program areas: global change; tropospheric ozone; stratospheric ozone; high performance computing; lead; biotechnology; air toxics; Superfund; and advanced manufacturing.

Risk-based priority-setting also led to increases in several programs. Three examples follow:

1) Research on exposures to particulate matter in the air is a high priority because of: the high potential human health risk; the high degree of uncertainty about the size and composition of the particles which may be responsible for these effects, the biological mechanisms of action, and the dose-response relationships at very low levels of exposure; and the high cost of control

2) Research on drinking water disinfectant by-products and microbial contaminants is a high priority because: certain microbes (e.g., cryptosporidium) cause severe effects, especially in individuals with compromised immune systems; there are high uncertainties concerning how to measure microorganisms in water and whether disinfection by-products pose a significant human health threat; and the potentially high costs of further regulation of drinking water.

3) Research on endocrine disruptors is high priority because: the problem is broad in scope; has potentially serious effects on the health of entire populations; some of the agents are persistent and widely dispersed in the environment

## AGENCY RESPONSE TO NAPA RECOMMENDATIONS

Question: How does your FY 97 budget request address the implementation of this and other NAPA recommendations?

Answer: Consistent with the recommendations in the NAPA report Setting Priorities, Getting Results EPA is actively engaged in the decisions. One important step, consistent with Congressional Direction, is the Science Advisory Board update of the 1990 report, Reducing Risk . This report will include the most up-to-date technical and scientific information on the relative risks of different public health and environmental issues.

The following are some examples of our use of risk information in priority setting. We are targeting enforcement actions where they will deter violations potentially causing the most serious risks to public health and the environment. We are proposing major, targeted changes in the Resource Conservation and Recovery Act on the degree of risk posed by particular waste. In the FY 1997 budget, we have refocused the national drinking water program on the contaminants causing the highest risk, such as cryptosporidium and disinfectant by-products, and delayed work on lower risk contaminants such as nickel and sulfate.

We are working closely with states, tribes, and localities to conduct comparative risk studies so that they can set their own priorities, which will, in turn, inform the national agenda.

The recently announced implementation of a new Planning/Budgeting/Accountability system has an one of its key components the consideration of science data and risk information in goal-setting, strategic planning, and resource allocation. The system will also have an accountability component which will ensure that risk reduction is occurring as envisioned.

It is important to note that, while risk is an extremely critical factor in priority setting, it is not the only factor. We must also consider other factors including legal mandates, court-ordered and statutory deadlines, programmatic costs and benefits, technological availability and public preferences. We must also consider the statutory framework under which we operate.

## ENVIRONMENTAL LEGISLATION FLEXIBILITY

Question: The NAPA report clearly leveled some of the blame for EPA's fragmented policies on Congress. Do you feel that you can provide sufficient flexibility within the confines of current environmental legislation or do you need further legislative reform?

Answer: As we proceed with multi-program regulatory reinvention activities, such as Project XL and the Common Sense initiative, and examine our legal authorities for undertaking specific actions, we frequently find that we have more flexibility to act than general conventional wisdom may have dictated. We would nonetheless not rule out the possible future need for legislative changes to implement specific actions under Project XL or another program or for launching new, but as yet unidentified, cross cutting initiatives. The Enterprise for the Environment initiative, EPA's Statutory Integration Project, and NAPA's proposed study (New Directions in Environmental Protection) may also identify where additional statutory flexibility would help us attain better environmental results at lower costs.

## PEER REVIEW PROCESS

Question: I would like to hear about the specific changes EPA has implemented in order to strengthen its peer review process.

Answer: EPA issued a peer review policy statement in June 1994. Each Assistant Administrator (AA) and Regional Administrator (RA) is responsible for a peer review program in their office. To that end, each AA/RA developed standard operating procedures (SOP) by September 1994 which apply the policy to major work products that are primarily scientific and technical in nature and may contribute to the basis for policy or regulatory decisions. ORD is again in the process of revising and updating its SOPs.

In particular, the Science to Achieve Results (STAR) program has been improved by incorporating procedures and practices used by the National Science Foundation (NSF) for research grants. During the 1995 partnership between EPA and NSF, three senior EPA scientists worked closely with NSF staff to announce and peer review the applications to the 1995 NSF/EPA Partnership for Environmental Research. As a result of the training received at NSF, the procedures previously used by EPA were modified for the 1996 EPA announcements. EPA continues to work closely with NSF in 1996 in both the EPA/NSF Partnership and in the EPA-only announcements.

Question: How many "experts" review each grant application?

Answer: Peer Review procedures currently in place for the Science to Achieve Results (STAR) program require that each grant application be reviewed for merit by at least three peer reviewers. Most grant applications, in fact, are reviewed by additional peers during peer review panel deliberations.

Question: How do you plan to monitor and evaluate the grantees' progress?

Answer: The primary evaluation of a grantee's progress and success of their research is determined by the acceptance of their work by the scientific community. Often this is documented by publication of the results in the peer reviewed literature. EPA will monitor progress through a project officer assigned to each grant. Annual written progress reports are required on each grant. Those reports will be distributed throughout Agency laboratories and program offices so that interested scientists, engineers, and management officials may review them and apply them to their current assignments and projects. There are also plans for each grantee to participate in an annual workshop for their topic area during which they will present their progress to interested scientists and engineers, both inside and outside of the agency, and receive peer feedback.

## ENVIRONMENTAL TECHNOLOGIES AND THE INTERNATIONAL MARKET

Question: The U.S. private sector will have a major advantage in the emerging international market for environmental technologies. I understand that EPA is working with other federal agencies to support the development of environmental technologies, as well as promote U.S. investments abroad. Please give concrete examples of how the private sector depends on EPA to help it develop and market environmental technologies

Answer: The Environmental Technologies Trade Advisory Committee (ETTAC), a high level group of private sector officials advising the U.S. Government, has underscored the important role EPA plays in "conditioning" international markets for U.S. companies (or "softening the beaches" in the words of Metcalf & Eddy CEO Don Deieso). In its soon-to-be released report, ETTAC notes that the "technical assistance and training programs that can be offered by the EPA provides valuable capacity-building for ensuring that buyers in the markets are making decisions based on scientific and technical criteria." Calling on Congress and the Administration to reconsider the resources allocated to EPA for its international programs, the report says:

> "Widely recognized as the leading source of environmental regulatory and management expertise worldwide, EPA is frequently approached by foreign governments and organizations for assistance in establishing the environmental regulatory and management capabilities that can drive the demand for U.S. technologies. Though the percentage of its total budget directed at international is small (and diminishing), EPA's regulatory reinvention programs, such as the Common Sense Initiative and Project XL, have great potential for international application, thereby positioning U.S. companies with experience in these programs for competitive advantage." (*Recommendations Report of the Environmental Technologies Advisory Committee* (Draft), Washington, DC, June 1996, Page 2-6)

QUANTIFIABLE BENEFITS OF ETI

Question: What are the quantifiable benefits to these companies, and to the American public, of EPA's assistance to these companies?

Answer: According to U.S. industry estimates, every $1 billion worth of sales overseas is associated with over 19,000 new jobs for American citizens. Currently employing over 1 million Americans, the environmental industry is expected to add an additional 180,000 jobs over the next four years, a rate double that of the economy as a whole.

While it is difficult to quantify the specific relationship between EPA's international activities up-front and the resulting export or trade opportunities for U.S. companies, there are many instances in which U.S. companies directly attribute sales to EPA's efforts. According to Environmental Technologies Group, Inc of Georgia, for example, a small business manufacturer of a remote air sensing technology, EPA's participation at a technical workshop in Brazil was instrumental to the introduction of this technology throughout Latin America, with the first sale of $147,000 concluded at the meeting itself. The travel and staff-time of two EPA technical personnel were the only costs to the American taxpayer. Similarly, TRC Companies in Connecticut attributes an EPA-hosted conference on innovative environmental financing for Poland with facilitating the establishment of a U.S.-Polish trading company that should greatly promote the application of U.S. technologies in meeting the $1 billion market in Poland. The joint venture has already concluded a $50 million agreement with NALCO Fueltech of Illinois. EPA's technical assistance to the Government of Thailand has not only helped solve a pressing health and environmental threat posed by coal-fired power plants in the Mae Moh Valley, it has also resulted in over $120 million worth of sales for a Texas-based vendor of air pollution monitoring and control equipment. Technical assistance to the Czech Republic has resulted in the sale of $7.5 million worth of U.S. monitoring and calibration equipment since 1991, with the entire monitoring system in the country now linked to U.S. companies. The establishment of pollution prevention technology centers in Poland, Russia, China, the Czech Republic and the Ukraine are not only disseminating critical information on environmental protection, they have also contributed to the sale of over $5 million worth of U.S. environmental goods and services, with agreements signed for $25 million more.

The U.S. Environmental Training Institute (USETI), a public-private partnership that trains developing country officials in U.S. environmental management techniques, directly attributes less than $1 million of EPA support to over $140 million in project contracts for U.S. companies. These funds have also been used to support state matching grant programs for small and medium-sized businesses in North Carolina, California, Maryland, Massachusetts, Connecticut, Rhode Island, Vermont, New Hampshire and Maine. In cooperation with the Maryland Department of Environment and the Maryland Office of International Trade, for example, USETI has worked with a number of Maryland companies in establishing the necessary contacts throughout Asia and Latin America, the two regions that represent the worlds fastest growing markets for environmental technologies.

Within the U.S., ETI is producing substantial economic benefits to technology developers, regulatory officials and technology users in areas such as:

o POLICY/REGULATORY CHANGES TO PROMOTE INNOVATION - EPA has embarked on an aggressive campaign to streamline its regulatory, permitting and enforcement programs, provide flexibility and increase incentives for companies and communities by:

--developing innovative Title V, Clean Air permits that protect public health with flexible operating provisions that meet air quality standards while accommodating companies' needs to use new technologies and processes;

--extending compliance deadlines, for example, for sources of nitrogen oxides willing to adopt more efficient technologies;

--providing participants in Superfund site clean-ups incentives to use innovative technologies by reimbursing them for up to 50% of the cost of the remedy, in the event that it fails to perform and subsequent remedial action is needed;

--using the marketplace to trade pollution credits or help communities and companies get top dollar for recycling their wastes. For example, ETI supports the Chicago Board of Trade's electronic commodities exchange for paper, glass and plastics. This protects the environment by reducing demand for landfills and incinerators; it provides economic benefits by creating jobs and extending the life and value of products and resources.

o BUILDING STATE AND LOCAL CAPACITY - Without ETI support, states and communities will continue to approve the use of new technologies, case-by-case, site-by site--markets will continue to be fragmented. The fate of many new, innovative and cost-effective technologies is often determined at the state and local levels. If states and communities don't have the time or incentives to allow for new approaches, companies have only conventional, and often expensive technologies to meet requirements.

-- For example, with ETI support, the National Governors' Association and six states are working together to overcome interstate barriers to technology innovation. California, Illinois, New Jersey, Massachusetts, Pennsylvania and New York have just signed an MOU to pilot the evaluation and joint approval of high-payoff technologies.

- BREAKING INTO MARKETS THROUGH VERIFICATION - Without ETI funding, a system to test the viability of a national verification program will not move forward, and the lack of credible data will continue to be a significant factor in limiting the adoption of promising environmental solutions by regulators, potential users, and the financial community.

- GETTING INFORMATION OUT ON WHAT WORKS - Creating an environment where new technology development can progress unhindered is not the only loss that would come with the elimination of ETI. A portion of the program is devoted to spreading the word on which technologies work across businesses, particularly in industries dominated by small companies. Many small businesses have neither the time, money nor the expertise to examine alternatives to current operations.
  - -- ETI addresses this problem, through the Design for the Environment (DfE) program with metal finishers, printers, dry cleaners and printed wiring board manufacturers.
  - -- Through several ETI funded information systems such as E-LYNX, small businesses will be linked to technology developers, regulators and vendors who can assist them find the latest, verified technologies that are available to solve their environmental problems.

ROLES OF FEDERAL AGENCIES IN ETI

Question: Describe clearly the difference between the roles that EPA, the Department of Energy, the Department of Commerce and other federal agencies play in the ETI. How much money has the EPA leveraged from other federal agencies for environmental technology?

Answer: EPA leads the Environmental Technology Initiative. The Department of Energy, the Department of Commerce and other federal agencies have representatives on EPA's Innovative Technology Council who solicit, peer-review and select ETI partnerships and projects for funding. DOE, DOC and other federal agencies also receive ETI funding for their approved projects. Approximately 30% of the ETI portfolio of 274 projects involve more than 80 federal agencies, laboratories or technology consortia. ETI money often leverages millions of other federal agency research and development, environmental technology spending by investing in the key aspect of a project that will eliminate a barrier to innovative technologies being used.

For example, the Department of Interior's Bureau of Reclamation funded a $4-million demonstration, constructed wetland unit in Phoenix, Arizona to evaluate the costs and benefits of using this innovative wastewater treatment technology. ETI invested $400,000 to identify and reduce the barriers to having a full-scale constructed wetland incorporated in the City's water quality permit so that they can meet federal and state water quality standards at lower cost. Phoenix Deputy City Manager, George Britten claims that using the new technology will cut compliance costs by 70%, enhance community wildlife resources and most importantly, the ETI project "makes EPA an equal partner with the City and state in the outcome of the project."

More than twenty other communities are also interested in using constructed wetlands to solve their water quality problems, pending the successful adoption of the technology in federal and state permits. In one of many other examples, DOE-developed hazardous waste clean-up technologies are being verified with ETI support. This will ease their approval by federal and state regulators as well as reduce the federal government's cost to cleanup DOE facilities.

## RESPONSIBILITY FOR COORDINATING ETI

Question: I understand that ETI is a joint effort among several offices in EPA -- why isn't there one office responsible for coordinating the science and international aspects of ETI?

Answer: While the Assistant Administrator of EPA's Office of Policy, Planning and Evaluation is the National Program Manager for the Environmental Technology Initiative--ETI supports EPA's agency-wide mission to protect public health and the environment with high quality science through the Agency's Innovative Technology Council (whose members represent all EPA programs). In this way, putting technology innovation to work to protect public health and the environment while cutting costs, becomes everyone's job--not just the responsibility of a select few in one office or program area.

## INTERNATIONAL PROGRAM OPERATIONS

Question: Environment is not merely a domestic issue as evidenced by global change, the Mexico Border cleanup, and ETI...tell me specifically (list and describe) about the operations of your international program. How do the activities of OIA complement those of other EPA offices?

Answer: EPA's international programs generally fall into the following categories:

> Protection of U.S. health and environment from global and regional environmental risks. EPA's global and regional initiatives are outlined in the draft EPA report Environmental Goals for America. This draft report presents qualitative milestones and strategies to reduce climate change risks, restore the stratospheric ozone layer, protect the oceans, reduce global toxics risk, and reduce transboundary pollution.
>
> Protection of the health and environment in border regions. The new binational Border XXI Framework document, now available for public review, lays out an ambitious set of long term objectives for environmental activities in the U.S.-Mexico border area and describes on going activities. Work with Canada involves implementation of the Great Lakes Water Quality Agreement, the U.S. Canada Air Quality agreement and numerous other agreements designed to protect the environment on both sides of the border. EPA, with leadership from OIA, is responsible for working with the new NAFTA institutions including the North American Commission on Environmental Cooperation and the border financing organizations the BECC and NADBank.
>
> Reducing the costs of environmental protection in the United States. For example, cooperative programs enable the United States to benefit from scientific, technological and environmental management breakthroughs in other countries and to share the burden of environmental research and regulation internationally. The additional U.S. resources freed up as a result of this cooperation can be reinvested in other environmental programs or used for entirely different purposes.
>
> Promoting broader US economic, national security and other foreign policy objectives. Because of EPA's unparalleled experience, EPA's services are in demand throughout the world.

Common environmental approaches can reduce unnecessary trade barriers and "level the playing field" for U.S. business and industry. By strengthening environmental management capabilities in other countries, we promote environmentally sustainable development and create demand for U.S. environmental technologies and services. By promoting political and economic stability in other countries, we can also serve U.S. national security interests.

OIA manages EPA involvement in international policies and programs that cut across EPA Offices and Regions. Providing leadership and coordination on behalf of the EPA Administrator, OIA serves as the Agency's overall focal point on international environmental matters. Specific functions include:

-- *Manage EPA programs with Mexico, Canada and other priority countries.* EPA's border programs with Mexico, for example, directly involve four U.S. States, two EPA regions, and every single EPA program office. Cooperation with Mexico and Canada also involves complex environmental issues associated with the North American Free Trade Agreement.

-- *Provide leadership, analysis and coordination for international negotiations on trade and environment, marine pollution, and other policy initiatives.* The office also oversees EPA participation in environmental programs of the World Bank, the Organization for Economic Cooperation and Development, and other intergovernmental bodies.

-- *Manage the Agency's international technology diffusion and technical assistance programs:* With funding from USAID, EPA is currently carrying out technical assistance programs in Russia, Eastern Europe, Central America and Asia. EPA is responsible for implementing the Partnership for Pollution Prevention agreed to at the Miami Summit of the Americas. An important element of these activities is support for the phase out of leaded gasoline throughout the Hemisphere, one of the major sources of childhood lead poisoning. EPA also supports several other of the Administration's foreign policy initiatives including the Gore-Cherynomyrdin Commission and the Gore-Mbecki Commission. EPA's cooperative work with China has been particularly important to U.S. foreign policy because it is one of the few areas where progress can be made despite other tensions in the relationship. Recognizing the enormous expertise and resources of the private sector, many of the programs emphasize partnerships with the U.S. business community.

-- *Provide essential support services, including inter-agency coordination; management of the Agency's international travel and liaison with U.S. missions abroad.*

## STRENGTHENING THE OFFICE OF INTERNATIONAL ACTIVITIES

Question: It is increasingly obvious that, because of the global nature of environmental problems, we need international cooperation to keep our own country clean. How are you planning to strengthen your international office and tighten its coordination both with other offices in EPA and other federal agencies to meet the growing international nature of environmental policy?

Answer: EPA cannot achieve its statutory mandate without international cooperation. EPA's international activities protect U.S. health and environment from global and regional environmental risks, protect U.S. health and environment in border regions, reduce the cost of environmental protection in the U.S., and serve U.S. economic, national security, and other foreign policy objectives.

The international office is being strengthened through greater involvement in EPA strategic planning and other "reinvention" initiatives that respond to the NAPA report Setting Priorities, Getting Results. For example, for the draft EPA report Environmental Goals for America, OIA played a lead role in developing international environmental milestones that support EPA's statutory responsibilities. OIA also is contributing to the development of EPA's new Planning, Budget and Accountability system, and is examining environmental innovations in other countries in support of the EPA Statutory Integration Project and the Enterprise for the Environment.

As U.S. and EPA coordinator for the North American Commission for Environmental Cooperation, OIA is fostering environmentally sustainable development in North America in partnership with other federal agencies, state and local officials, tribal leaders, NGOs, the U.S. Council for International Business, and academics. As co-chair of EPA's Environment and Trade Task Force, OIA supports the U.S. Trade and Environment Policy Advisory Committee - made up of top officials of EPA, USTR, other agencies, the business community, and NGOs - and participates in international negotiations on trade and environment issues.

OIA has established a strong partnership with the Departments of Defense, Energy, and other agencies for international work on environment and security. To better anticipate and respond to emerging environmental risks, OIA is developing a G-7 Environmental Forecasting initiative in partnership with other G-7 countries and other EPA offices. Finally, under the auspices of the Asia-Pacific Economic Cooperation (APEC) forum, OIA is developing a "clean production" partnership with 17 other Asia-Pacific economies, in coordination with Commerce, State, Labor, Energy, state governments, and U.S. industry.

The international office is also being strengthened through partnerships. For example, OIA has built a strong partnership with State, NOAA, the Coast Guard and others to address marine pollution. This partnership was instrumental in the success of the 1995 Washington Conference Concerning the Protection of the Marine Environment from Land-Based Activities, at which more than 100 governments agreed to pursue legally-binding action on a set of persistent organic pollutants (e.g., DDT, PCBs, chlordane) that bioaccumulate and that circulate globally. The U.S. has already banned or severely restricted discharges of these pollutants, but ambient levels continue to build in this country due to continued use elsewhere.

OIA (with OPPE) also coordinated the involvement of 17 federal agencies, Congressional staff, states, cities, tribal governments, industry, NGOs, labor unions and academics in an environmental performance review of the U.S. by the Paris-based Organization for Economic Cooperation and Development (OECD). Drawing on the experiences of "peer" countries, the recently released OECD report evaluates U.S. environmental performance since 1970, and presents 63 recommendations that roughly parallel those provided by NAPA and by the President's Council on Sustainable Development.

## EPA's INTERNATIONAL ROLE WITH OTHER FEDERAL AGENCIES

Question: Can you describe how EPA works with other Federal agencies on international activities -- specifically what value added does EPA provide? How has EPA leveraged money from other agencies for international environmental activities?

Answer: EPA's mandate and expertise make it uniquely qualified to serve as the leading environmental advocate for the United States: While the Department of State is responsible for the conduct of overall U.S. foreign policy and other agencies are also involved in the international environmental arena, only EPA has environment as its primary mission and expertise. International development is, for example, the primary goal for the U.S. Agency for International Development (USAID). Similarly, exports and trade is the bottom line for the Department of Commerce.

EPA enjoys unequaled credibility worldwide: With over twenty-five years of experience, EPA is widely recognized as the world's leading source of environmental management and regulatory expertise. "Is this approved by U.S. EPA?" is one of the most frequently heard questions worldwide.

Since 1970, EPA has been the primary executive agency charged with protection of the environment and as such is frequently called upon to provide the technical experience required by other federal agencies.

EPA has provided technical assistance to USAID to support its work with developing countries on the management of pesticides and to support its foreign disaster assistance efforts since the late 1980s. Under a $900,000 interagency agreement, EPA has provided technical assistance to government agencies, exporters and farmers in Central America on pest management issues. Cooperation between EPA and USAID increased dramatically in the early 1990s, when USAID began its operations in Central and Eastern Europe and uncovered enormous environmental problems caused by unchecked industrialization that threatened economic reform efforts and long term prospects for economic growth, problems different than those traditionally dealt with by USAID. With funding from USAID, totaling approximately $20 million over the last five years, EPA has undertaken major environmental projects to assess and clean up some of Eastern and Central Europe's worst environmental problems. For example, EPA has leveraged approximately $3 million from other US agencies as well as the governments of Russia and Norway for the Murmansk project. This project will expand and upgrade a treatment plant for low level liquid radioactive waste from the Russian civilian icebreaker fleet and the decommissioning of Russia's Northern Fleet nuclear submarines eliminating discharges into the Arctic.

Along the U.S./Mexico border, EPA works with DOI and DHHS to stop the deterioration of important natural ecosystems and to clean up pollution caused by rapid industrial growth in the area. The new Border XXI plan is expected to provide the basis for sustainable development in this region of rapid economic and population growth by building effective partnerships among Federal, State and local agencies. EPA grant funds for water and wastewater treatment in the border area are expected to leverage funds from the NADBank, the World Bank, the Government of Mexico, state and local agencies, as well as private capital.

In China, EPA works closely with DOE, and DOC in order to take advantage of each agencies ongoing efforts in projects where energy, the environment, and trade intersect. U.S. Technology for International Environmental Solutions (USTIES) is just one example of a program that advances this effort where we are leveraging equal amounts of DOE investment and considerably more private sector investment in two energy projects.

EPA has provided technical support to the Peace Corps so that its volunteers can direct solid waste management programs for urban centers in Africa and deliver environmental education programs in elementary and secondary schools in Eastern Europe. EPA/OIA is working closely with the State Department and the USTR on ecolabelling issues with the European Union.

## WTO AND REFORMULATED GASOLINE

Question: I understand that the WTO has rejected the current rules for importing RFG and conventional fuels. What options are currently under consideration by EPA and the U.S. Trade Representative to respond to the WTO ruling? Will EPA change the substantive provisions of the Clean Air Act to accommodate imports of dirtier RFG and conventional fuel? Should EPA decide to change its final RFG and conventional rules, will any new EPA proposal be subject to a full and complete administrative rulemaking?

Answer: On June 19, 1996 the United States announced that it intends to meet its obligations under the World Trade Organization (WTO) as they apply to imported gasoline.

This announcement is made in response to the April 29, 1996, finding of the Appellate Body of the World Trade Organization which concluded that the EPA's establishment of different requirements for imported gasoline and domestically produced gasoline discriminates against importers from Brazil and Venezuela, in violation of WTO rules.

We have initiated a process which will examine any and all options for compliance. Our examination will be an open process. All comments and options will be carefully considered and the outcome will not be prejudged or decided before the completion of this process. In evaluating options, a key criterion will be fully protecting public health and the environment.

EPA issued a Federal Register notice on June 28 offering all interested parties an opportunity for input into this process.

## COST BENEFIT ANALYSIS FOR THE PULP & PAPER CLUSTER RULE

Question: As first proposed in December of 1993, the Cluster Rule was estimated by the EPA to have a potential impact of $4 billion on the U.S. Industry. In both FY '95 and FY '96, the Appropriations Committee directed the agency to perform an analysis of the proposed Cluster Rule for the Pulp and Paper Industry. This analysis is intended to ensure that the costs and benefits associated with the rule are balanced. When will this report be completed?

Answer: EPA expects to complete the cost and benefit studies, as well as other technical analysis, later this year. Several preliminary reports are complete, and they have been added to the rulemaking docket. Since the Cluster Rules were proposed in 1993, EPA has worked extensively with the industry and other stakeholders to re-evaluate our original cost and benefit comparisons. The Agency is seriously considering a variety of technology approaches, and many of the stakeholders have helped by submitting additional data and other information.

EPA published a Federal Register notice on March 8, 1996, that presented some preliminary conclusions based on the new data. EPA plans to publish another notice later this summer discussing additional preliminary findings regarding the technologies and compliance costs. The upcoming notice will solicit comments that the Agency will use to make decisions concerning the impact of the final rule. The notice will also discuss innovative approaches to include long-term incentives in the final rule. These incentives are intended to foster long-term continuous improvement in the pulp and paper industry, and we are encouraged by the positive reaction we have received so far. We look forward to additional public review and comment on this innovative regulatory approach, once the next Federal Register notice is published.

## CLUSTER RULE--EFFLUENT GUIDELINE PROMULGATION

Question: It is our understanding that the agency has been considering for over a year making significant improvements to the effluent guidelines portion of the Cluster Rule which would bring the costs and benefits into closer alignment. However, there seems to be a delay in coming forward with those improvements. What are the reasons for the delay and when does the agency anticipate that a final rule will be promulgated?

Answer: EPA has been collecting and analyzing new information and new data to support the effluent guidelines portion of the Cluster Rules since the rules were proposed in 1993. The Agency has completed several preliminary reports, and those have been added to the rulemaking docket. The cost and benefit studies will be completed later this year.

The amount of new information that the Agency is using to improve the Cluster Rules is substantial. The implications of the new data and information are critical to final decisions. Thus, the Agency is maximizing the value of the new data and information by making it available for public review and comment. The Agency is also making every effort to include the regulated community and other stakeholders in the data review process. The Agency continues to work closely with all interested parties to re-evaluate the original cost, benefit, and technology conclusions. Several Federal Register notices have been published to announce new data, present preliminary findings, and solicit comment. This very open and forthcoming regulatory development process has resulted in delays to issuing final rules, but at the same time, has responded to complex and controversial technical issues.

EPA plans to publish another notice later this summer discussing preliminary findings regarding the technologies and compliance costs for the effluent guidelines. The upcoming notice will solicit comments that the Agency will use to make decisions concerning the final rule. The notice will also discuss innovative approaches to include long-term incentives in the final rule. These incentives are intended to foster long-term continuous improvement in the pulp and paper industry, and we are encouraged by the positive reaction we have received so far. We look forward to additional public review and comment on this innovative regulatory approach, once the next Federal Register notice is published. The anticipated date for issuing final rules will depend on the comments received on the upcoming notice.

## AGENCY PLANS FOR MACT I IMPROVEMENTS

Question: With respect to the air standards part of the rule, the Committee was pleased to see the re-proposal of the portion of the rule dealing with process sources: MACT I. Does the agency plan to go forward with these improvements when it promulgates the final rule?

Answer: On March 8, EPA published an interim notice setting forth how the Agency plans to use industry data and information received since the December 1993 proposal to make substantial changes to the MACT portion of the Cluster Rule. Some of these changes include revised control requirements by pulping process subcategories and providing kraft mills additional time to comply with certain pieces of equipment in their mills. Comments received on these changes during the public comment period were generally quite favorable. Therefore, at this time, the Agency plans to go forward with promulgating the changes discussed. The Agency did receive some comments on the notice and industry continues to submit new information and data. These additional comments along with the new information and data will also be considered in developing the MACT standard for promulgation.

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## QUESTIONS SUBMITTED BY SENATOR LEAHY

### LAKE CHAMPLAIN

Question: During the Appropriations Hearings in preparation for writing the FY 1996 bill, I asked you whether the EPA would be a partner in implementing the plan. During this May 12, 1995, hearing you responded, "Absolutely. We think the work that we have been able to do in partnership has been extremely important to the people of Vermont and the people of the region. We are absolutely committed to continuing in our partnership in the management conference." Unfortunately, the President's budget still does not reflect this continuing commitment. It has been up to me and the Committee to provide funding for this project. Why has the EPA not requested funding for the Lake Champlain Basin Program in any of its last three budgets?

Answer: The Agency remains committed to supporting the cooperative effort in the Lake Champlain basin, even though budgetary constraints have precluded requesting targeted funding for the Program. EPA continues to play a leading role on the Lake Champlain Management Conference, with an EPA representative serving as the Conference chair and other staff providing key technical support. I would like to add that our budget request does include significant levels of resources (e.g., our Clean Water Act Section 319 nonpoint source grants) that, at the States' discretion, can be put to use in supporting many aspects of such high priority, geographically targeted projects.

### FY 1998 FUNDING FOR LAKE CHAMPLAIN BASIN

Question: This year I asked the same question in the May 23, 1996, hearing and received the same assurance that EPA plans to help clean up the lake. How much funding does the EPA intend to request for FY 1998?

Answer: We have only just begun our internal deliberations that will lead to our 1998 budget request, so we cannot yet answer that question. I can assure you that we will remain committed to supporting water quality protection efforts in the Lake Champlain basin, including providing active participation on the management conference.

### CLEAN AIR STATUS AND TRENDS SITE

Question: The Environmental Protection Agency has established a solid working relationship and credible database measuring air pollution over the Lye Brook Wilderness. This Clean Air Status and Trends (CASTNet) site (Lye145) seems to be threatened by budget cuts. How much funding is provided in the President's budget for the national program, and for the Lye Brook Wilderness project specifically?

Answer: The Clean Air Status and Trends Network (CASTNet) consists of monitoring stations that measure weekly sulfur and nitrogen deposition, continuous ozone levels, visibility and fine particle concentrations in rural areas, primarily in the Eastern U.S. The Office of Research and Development (ORD) is in the process of review and redesign of the network as part of a coordinated National Framework for Environmental Monitoring and Research (NFEMR). Over the next 6 months, a combined science and management analysis of CASTNet will be conducted to investigate a comprehensive set of questions including: a reconsideration of the network's design objectives in light of the National Framework for Environmental Monitoring and Research (NFEMR), ORD's need for a core exposure monitoring and research network, and EPA's Office of Air and Radiation's (OAR) need for routine status and trends information; the impacts of changing monitoring and analysis frequencies, locations and techniques; the savings that might be realized from altered monitoring approaches or changes in data analysis and management; and alternative ways of providing for shared long term funding of needed monitoring information. We anticipate there will be cost savings and efficiencies gained as a result of the monitoring network redesign by EPA and the interagency NFEMR providing more effective and efficient use of monitoring resources across the federal government.

CASTNet makes up one portion of the EPA's overall Environmental Monitoring and Assessment Program (EMAP) program resources, which is intended to develop the science of integration for more complex monitoring networks across numerous Federal agencies. Since ORD is still in the process of redesigning CASTNet through collaboration with other agencies, the amount of funding provided for CASTNet in FY 1997 will be subject to discussion prior to finalizing funding levels. CASTNet sites, such as the Lye Brook Wilderness site, are typically allocated $70,000-$75,000 per year, with $16,000-$25,000 for the site operator and the remainder for chemical analyses, data processing and management, quality assurance, and coordination. Although the Lye Brook Wilderness site is now operating and will remain in operation during CASTNet's redesign, the status of this site and others may be impacted as a result of the in-depth review of CASTNet being undertaken as part of the new NFEMR design.

## MERCURY POLLUTION

Question: Health warnings regarding human consumption of sportfish could have a measurable effect on the economic viability of the sport fishing economy. Can the EPA predict the trend of additional mercury pollution entering the ecosystem in the future? When does the EPA plan on updating its public health standards on mercury pollution in fish tissue?

Answer: Predicting future emissions is necessarily speculative. In addition, it is important to realize that it will take many years for reduced emissions to result in lower levels in fish flesh, except perhaps in the immediate vicinity of a large source. Consequently, the number of mercury-related fish consumption advisories posted by the states will likely continue to increase over the next several years as States monitor additional water bodies.

In the U.S., there has been real success in the dramatic drop in mercury emissions from manufacturing over the past decade. This decline can be attributed to the reduction of mercury use in a number of industrial applications, particularly the removal of mercury from paint, and with substantial reductions of mercury in batteries. Current efforts to reduce mercury in other products (e.g., fluorescent lamps) and processes lead to the prediction that mercury use in the manufacturing sectors will continue to decline slowly. The largest identifiable sources of mercury emissions are municipal waste combustors, medical waste incinerators and coal-fired utility boilers. The U.S. EPA has finalized emission limits for municipal waste combustors and proposed rules for medical waste incinerators that will reduce mercury emissions from both of these sources by about 90 percent. Future trends in mercury emissions from utility boilers are largely dependent on both the nation's future energy needs and the fuel chosen to meet those needs. Another factor is the nature of the actions the utility industry may take in the future to meet air quality requirements under the Clean Air Act.

Moreover, the global circulation of mercury means that levels in fish in the U.S. are affected by emissions around the world, just as U.S. emissions affect levels in other countries. While mercury is on the agenda of several international forums, the negotiations are at an early stage and no concrete measures have been agreed to.

Updating our standards depends on an evaluation of the results of the two major epidemiological studies that have been undertaken. These results will not be fully available until 1998. We estimate that it will then take at least a year for EPA, in cooperation with other Federal agencies and outside stakeholders, to reach firm conclusions on whether and how to change our human health assessment. As you know, the Food and Drug Administration sets standards for contaminants in fish sold commercially in interstate commerce, and EPA provides guidance to the States for use in fish consumption advisories for recreational and subsistence fishing.

## ZEBRA MUSSELS

Question: How would the Environmental Protection Agency use $500,000 specifically targeted toward zebra mussel research and control?

Answer: Consistent with the use of the risk assessment/ risk management paradigm, the Agency would review where the greatest uncertainties of risk exist to set our priorities and make decisions on the nature and direction of our research efforts accordingly. One of the likely areas to be addressed would be in the area of mitigation and control.

## BARGE CANAL

Question: Can you give me a status update on the clean up progress of the Barge Canal (Pine Street) Superfund Site?

Answer: The 80-acre Pine Street Canal site consists of a portion of the Pine Street Canal, a turning basin, an adjacent filled-in wetland, an area formerly known as Maltex Pond, and an additional portion of land. In 1908, a coal gasification plant began operating on Pine Street, southeast of the canal. The plant ceased operations in 1966. Plant wastewater and residual oil and wood chips saturated with organic compounds were directly discharged or disposed of in the Pine Street Canal wetland. During the 1960s and 1970s, an oil-like material was detected seeping from the wetland into Pine Street Canal, the turning basin, and Maltex Pond. The State detected high levels of organic compounds associated with coal tar at several locations on the site, which is located along the proposed location for a major highway. The State is concerned that construction will release organic compounds into the canal and possibly into Lake Champlain, the source of Burlington's drinking water. There are several single and multiple-family dwellings, including apartment buildings, located within a mile of the site. Burlington has a population of approximately 39,100.

Contaminants in the groundwater include polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs), including benzene, toluene, and xylenes. The sediment is contaminated with polychlorinated biphenyls (PCBs), PAHs, and VOCs. The surface water is polluted with semi-volatile organic compounds and VOCs. The soil contains PAHs, VOCs, and heavy metals including lead. Cyanide has also been detected in the soil. There is unrestricted public access to the site, although access is difficult because of the marshy terrain. Trespassers may be at risk by touching or ingesting contaminated surface water, groundwater, soil, or sediment, or by swimming in the canal. In addition, eating contaminated fish may pose a health hazard. Portions of the site are seasonally flooded, permitting the spread of contamination. To inform the public of potential health risks, the site has been posted with warning signs and no fishing signs by the City of Burlington and the Vermont Department of Health. In addition, wildlife at the site has been adversely affected by contaminants, especially by the canal sediments.

In 1985, the EPA excavated 500 cubic yards of coal tar, solidified it, and disposed of it in an approved facility. The Maltex Pond area also was capped with clay, and was covered with topsoil and seeded. A temporary fence was erected, warning signs were posted, and some sampling was conducted. The emergency removal of coal tar, capping of the Maltex Pond area, and construction of a fence have reduced the potential of exposure to hazardous substances, making the Pine Street Canal site safer while further investigations are underway.

The EPA is currently investigating the nature and extent of site contamination. The EPA has conducted field investigations including a soil gas survey, a geophysical survey, air sampling, ecological studies, surface water and sediment sampling, soil sampling, installation of monitoring wells, and groundwater sampling. The field work was completed in early 1991. Treatability studies to aid in remedy selection were completed in 1992. An investigation to determine cleanup alternatives was completed in late 1992 and the EPA proposed a cleanup plan. The cleanup plan was withdrawn in 1993 after the public comment period. As a result, further studies will be undertaken prior to identifying alternative cleanup measures and selecting final remedies.

The PRPs (Green Mountain Power and New England Electric System) submitted the draft Additional Remedial Investigations report to EPA and the Coordinating Council on May 16, 1996. This report was disapproved by EPA because the data relied upon has not yet been validated to ensure usability. The PRPs currently hope to have the data validated by the end of June.

EPA has begun working on the ecological risk assessment; however, work has stopped until the data has been validated. It is expected that the Coordinating Council will be reviewing the validated data this summer and begin discussing remedial alternatives after completion of the ecological risk assessment. The PRPs have completed an initial screening of technologies.

A recent underwater survey of the sunken barges has revealed the presence of at least five sunken drums. The contents and origins of the drums are not know at this time. Additional work will be conducted to gather more information for the cleanup decision.

The City is still divided with respect to the alignment of a future Southern Connector. EPA and the Coordinating Council continue to encourage the PRPs and the City to work together in the future to develop at least one alternative that integrates the highway and Superfund projects.

## BROWNFIELDS

Question: What are the expected economic benefits of moving forward with this initiative and redeveloping polluted sites with appropriate uses nationwide? Is it possible to determine the economic opportunity in Vermont if we were able to bring the Brownfields program to two sites in Vermont?

Answer: The Brownfields pilot program is a relatively new program with the majority of pilots less than a year and a half in operation. However, we do have a few facts which point to the success possible at a Brownfield pilot. In Cleveland, Ohio where one of the first pilots is located, there has been $4.5 million in private sector investment, a $1.1 million increase in the local payroll tax, and more than 182 jobs created.

We can only speculate upon the effect that Brownfields would have in Vermont; however, EPA just recently awarded a Brownfield pilot to the City of Burlington, Vermont. Their proposal projects the $200,000 cooperative agreement will permit them to: engage affected neighborhoods in the Brownfields process; identify and assess the level of contamination at sites; identify and prioritize redevelopment plans; develop partnerships and obtain commitments; implement redevelopment plans; attract reinvestment and viable business to redevelopment sites; and integrate remediation into the redevelopment process.

## LAKE MEMPHREMAGOG

Question: The EPA has worked very well with the Department of Agriculture's Natural Resource Conservation Service to help farmers reduce non-point source pollution in the Lake Memephremagog watershed. Will Region I continue it's good work in this watershed in FY 1997?

Answer: EPA New England's Vermont State Program Unit recognizes the importance of continuing our work with farmers in the Lake Memphremagog watershed. We have developed an EPA work plan for FY'96 and have identified Lake Memphremagog as 1 of 3 special places in Vermont. We plan to work closely with our state, federal and local partners to jointly plan some agricultural outreach and education for FY'97. We will emphasize the importance of conducting such outreach in the Champlain and Memphremagog watersheds to our partners. In addition, we are entering into performance partnership grant negotiations with the state for FY'97. In those discussions we will raise the importance of using water grant funds to support nonpoint source activities in both the Lake Champlain and Lake Memphremagog watersheds.

In addition, EPA had preliminary discussions with the Vermont Department of Conservation and the Vermont Department of Agriculture, Food & Markets regarding how we can continue our efforts. Clean Water Act Section 319 Nonpoint Source Implementation funds can be used to effectively leverage available USDA cost-share money to achieve increased environmental results. In FY94, Section 319 money was used in conjunction with PL83-566 funds (USDA's Small Watershed Program), raising the Federal cost-share on Best Management Practices (BMP's) to 75%, effectively decreasing the amount of cost-share required from the farmer. This enabled many farmers to complete existing contracts with USDA, and encouraged many other farmers not yet under contract to sign on for BMP implementation. Depending upon the future availability of PL-83-566 funds, EPA, in consultation with State partners, will explore the use of additional Section 319 funds in this way. In addition to increasing the amount of Federal cost-share available for BMP implementation, Section 319 funds may also be used to provide crop management and BMP engineering services to agricultural operators implementing BMP's with PL83-566 funds and Vermont State cost-share funds in the Lake Memphremagog Basin.

A current nonpoint source activity in Vermont includes the use of FY96 Section 319 money to support agricultural engineers that will work with farmers to assist them in implementing Accepted Agricultural Practices (AAP's) in accordance with Vermont's recently adopted AAP Rule. One of the engineers hired will be spending approximately 35% of his/her time working with farmers in the Lake Memphremagog Basin.

IMPLEMENTATION OF THE FERC RULE AS A MITIGATION STRATEGY

Question: The Environmental Impact Statement prepared by the Federal Energy Regulatory Commission on its open access rule contains a number of assumptions on which I would appreciate your comments. These include the following:

a). The Commission assumes 60 - year lifetimes for powerplants, following which it assumes that they will be retired, to be replaced by cleaner combined cycle powerplants fueled with natural gas. What evidence demonstrates that these powerplants will be retired in 60 years? Is it true that some analysts, including those at the Department of Energy, assume a 75-year lifetime for powerplants? Is there any requirement in federal law that these powerplants will be retired? Is it within the power of either the Environmental Protection Agency or the Federal Energy Regulatory Commission to impose a lifetime of a finite period (e.g., 60 years) on powerplants at the end of which compliance with more stringent emission limits would be required? Could this be implemented as a mitigation strategy in the context of the open access rule?

Answer: Information on power plant operations collected annually by the Energy Information Administration (EIA), the North American Electricity Reliability Council, and EPA provides evidence that large coal-fired electric generation units will operate at least 60 years. Because so few units have retired in recent years, EPA's Office of Air and Radiation recently increased the assumed operating life of coal-fired units over 50 megawatts from 60 years to 65 years for analytical purposes. Such estimates are based on expert judgement. We are unaware of analysts at DOE assuming 75-year lifetimes for power plants. We know that EIA considers whether older coal-fired units should extend life for about 25 years, which will allow them to operate well over 50 years. We recommend that you contact Mary Hutzler, Director of the Office of Integrated Analysis Forecasting, EIA, to provide details on EIA's approach to plant life.

EPA is not aware of any provision in federal law which explicitly requires power plants to be retired once they reach a certain age. Under Title I of the Clean Air Act, States are authorized, in the first instance, to develop the mix of pollution controls that assures that the national ambient air quality standards will be attained and maintained, and that sources in that state do not cause ambient air quality problems in downwind areas. If the States fail to develop these controls, EPA, ultimately, may step in to do so. Thus, EPA's authority to develop these controls would depend on State action, coupled with an analysis of the effect of emissions from such plants on the air quality of the state in which they are located, as well as on other states or regions. EPA is not aware of express authority under which FERC could require power plants to meet minimum emission standards after reaching a certain age. However, we believe that FERC must consider environmental factors in making determinations with regard to matters within its jurisdiction, such as implementation of open access, and may adopt mitigation measures to prevent significant adverse impacts.

## FERC ASSUMPTIONS FOR NUCLEAR FACILITIES CAPACITY FACTOR

Question: b). FERC assumes that nuclear facilities will operate at a capacity factor of 74 percent. Is this assumption supported by experience in the industry? That is, what has been the average capacity factor for nuclear powerplants since 1990 and are there regional variations?

Answer: The FERC assumption of a nuclear capacity factor of 74 percent is supported by recent industry experience. According to EIA reports, the industry had a capacity factor of about 70 percent in 1991, which rose to 74 percent by 1994. Nuclear experts at EIA believe that the nuclear industry had a capacity factor over 77 percent in 1995. For its Annual Energy Outlook 1996, EIA estimated that the average capacity factor for nuclear plants in 2000 will be about 75 percent and decline to about 74 percent in 2005 and 2010. EIA believes there will be significant regional variation in plant operations over time with units in the parts of the Northeast operating with capacity factor percentages in the 60s and plants in the West having average capacity factors above 80 percent over time. We recommend contacting Mary Hutzler of EIA for further details.

## FERC ASSUMPTIONS FOR TRANSMISSION TRANSFER CAPACITY

Question: c). The Commission further assumes that transmission transfer capacity will be 105 percent of current capacity in the year 2010. It is my understanding that the current system has already operated at 105 percent of capacity. Is this so? Is it realistic to expect that there will be an average capacity of 105 percent after 14 years of technological improvements? Also, is it likely that there might be substantial increases in critical transmission corridors, such as those from western to central Pennsylvania; West Virginia to Virginia, North Carolina and South Carolina; and from Middle Atlantic to western New York/Massachusetts?

Answer: The assumption that transmission transfer capability in 2010 would be 105 percent of current transfer capability reported by the North American Electric Reliability Council (NERC) was a part of a sensitivity analysis conducted by FERC at the request of EPA. EPA is not in a position to state whether or not the current system has already operated at 105 percent of current transfer capability. We note that this 105-percent figure represents a substantial increase in transmission capability compared to the 75-percent level assumed in FERC's Final Environmental Impact Statement (FEIS). Indeed, the FEIS concluded that if transmission capability in 2010 were to increase to 105 percent of the NERC-reported level from 75 percent, then there would be increased generation by coal and gas plants in the Ohio Valley and decreased generation by such plants in the Middle Atlantic region (FEIS at 6-31). EPA does not know the likelihood of substantial capability increases in specific critical transmission corridors. It is our understanding that FERC assumed some increases in transmission capability where such increases are anticipated by NERC.

EPA's major concern about the transmission transfer capability assumptions in the FEIS is not about the growth in such capability per se, but rather how much additional growth in transmission capability might occur because of FERC's open access policies. While the FEIS makes the same assumptions about transmission capability in its base cases as in its open access rule scenarios, EPA believes it is reasonable to assume that transmission capability could increase due to open access. We concluded in our May 22, 1996 Technical Analysis of FERC Final Environmental Impact Statement on Open Access Rule (Order 888) (attached) that if open access policies lead to a 1-percent annual increase in transmission capability, $NO_x$ emissions associated with incremental exports would be 44,000 to 77,000 tons in 2000 and 58,000-75,000 tons in 2005. (See page 2-3.)

## LETTER FROM MARY D. NICHOLS, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION

MAY 22 1996

Kathleen A. McGinty
Chair
Council on Environmental Quality
Room 360
Old Executive Office Building
Washington, D.C. 20500

Dear Ms. McGinty:

Enclosed is the Environmental Protection Agency's (EPA) review of the Final Environmental Impact Statement (FEIS) on the Federal Energy Regulatory Commission's (FERC) open access rule (Order No. 888).

On the basis of this review, EPA concludes that the FERC has conducted an adequate analysis under the National Environmental Policy Act of the environmental impacts of the open access rule under a range of possible scenarios. The FERC made a reasonable choice of models (CEUM) and made assumptions for various factors input into the model that lie within the range of reasonable assumptions. EPA notes that the FERC performed the specific additional analyses that we requested in our comments on the draft EIS.

Naturally, there can be differences among reasonable analysts concerning the assumptions used in such an analysis. In our review of the final environmental impact statement, EPA has employed alternative assumptions for a number of model inputs. EPA believes the assumptions used by the FERC and those used by EPA both lie within the reasonable range. EPA concludes that significant emissions increases are unlikely to occur immediately under either FERC's or EPA's assumptions, due to the time it will take before firms operating under the rule are likely to significantly increase long-distance electricity sales. EPA's alternative assumptions, however, lead to projections of greater potential increases in emissions of NOx and other pollutants in future years than under the FERC's assumptions.

EPA believes these potential NOx increases can be averted by a combination of actions undertaken by the States and EPA under the Clean Air Act and, if those actions are not successful, back-up actions undertaken by the FERC under its authority. If the FERC makes appropriate commitments to undertake back-up actions as suggested in EPA's referral letter of May 13, 1996, EPA believes there will be adequate assurances against significant adverse environmental impacts from potential NOx increases due to the open access rule.

Sincerely,

Mary D. Nichols
Assistant Administrator
for Air and Radiation

## Technical Analysis of FERC Final Environmental Impact Statement on Open Access Rule (Order 888)

This report summarizes EPA's technical analysis of the Federal Energy Regulatory Commission's (FERC's) Final Environmental Impact Statement (FEIS) with regard to its open access rulemaking in Docket No. RM95-8-000.

EPA believes that the FEIS provides a credible basis for understanding the possible environmental impacts of the open access rule. EPA believes that the FERC selected appropriate analytic models, designed several informative policy scenarios and responded to the concerns that EPA raised with the draft EIS. However, after reviewing the FEIS and its underlying input assumptions in detail, EPA concludes that there are several key assumptions that drive the results on $NO_x$ emissions which could have been specified differently. Other reasonable assumptions in these areas could have led the FERC to attribute greater potential $NO_x$ increases to the open access rule.

## ANALYTIC ASSUMPTIONS

EPA believes that the FEIS High-Price-Differential Base Case, in combination with the Competition-Favors-Coal rule scenario, provides the most reasonable starting point for analyzing potential increases in $NO_x$ emissions from the open access rule.[1] The increases in $NO_x$ levels from the open access rule are likely to be at least as large as these scenarios suggest. This belief is based on our review of the assumptions the FERC used in these cases for delivered fuel prices for coal and natural gas through 2010, which are critical determinants of how much electric generation will come from coal and gas-fired units in the future. EPA believes that the fuel price assumptions underlying the High-Price-Differential Base Case and the Competition-Favors Coal rule scenario are the closest to what several leading energy experts relied on by EPA are now forecasting. Although these assumptions show a negative environmental impact from the open access rule, EPA recognizes that if relative fuel prices and technological improvements were more favorable for gas, the open access rule could lead to positive environmental benefits.

The Competition-Favors-Coal rule scenario, when compared with the High-Price-Differential Base Case, leads to projected increases in $NO_x$ emissions from the rule of 91,000, 55,000, and 93,000 tons in 2000, 2005, and 2010, respectively. EPA believes that some adjustments to this case are warranted to address analytic concerns discussed below in this paper. Such adjustments could show that the rule has the potential to cause much larger impacts than the FEIS estimates for the Competition-Favors-Coal rule scenario. In identifying these areas of concern, EPA did not attempt to devise a set of revised assumptions that provide a worst-case scenario. Such a case could imply increases in $NO_x$ emissions above the levels that are suggested in EPA's analysis below.

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[1] Notably this large price differential is much smaller than leading forecasters were saying the difference would be 2 to 3 years ago.

## ISSUES IN THE FEIS ANALYSIS

EPA undertook a broad investigation of assumptions in the FEIS that might significantly affect its conclusions regarding $NO_x$ emissions. We recognize that many judgments are required in an analytical exercise such as this FEIS and that reasonable people may disagree regarding which assumptions are appropriate. Below, we explain the results of our analysis of several issues where we substituted other reasonable assumptions that the FERC could have made for those in the FEIS. We describe the results of our analysis only for those adjustments which we found to significantly affect projected $NO_x$ emissions. Other adjustments we analyzed, where effects did not appear to be significant (or where the FEIS assumptions provide the best available treatment), include the FERC's use of: outdated $NO_x$ emission factors, older heat rate information than is now available on fossil unit performance, capital costs for new power plants, and possible changes in nuclear generator operation.

A word of caution is in order regarding this analysis. Due to time and resource constraints, we were unable to undertake any additional modeling runs. Our conclusions are thus based on a review of the FEIS itself and of data from specific model runs performed for the FEIS, using spreadsheet analyses. We believe it is possible to draw tentative conclusions from this analysis about the effects of individually changing certain key assumptions. However, it is not possible, using this approach to reliably estimate the joint impact on $NO_x$ emissions of changing several assumptions simultaneously. Thus, we are not presenting here the overall level of $NO_x$ emissions that would result from modeling runs if a different set of assumptions were substituted for those used in the FEIS.

**Transmission expansion.** At EPA's request, the FERC conducted a sensitivity analysis of transmission expansion in the final EIS. While the FERC concluded that the effect of substantial increases in transmission capacity were "very slight," EPA interprets the results of this sensitivity differently. EPA continues to believe that the treatment of transmission in the EIS is inconsistent with the policy the Commission has proposed with regard to transmission. It is reasonable to conclude from the FEIS that if a modest expansion of the transmission system (including upgrades of existing facilities) is attributed to open access policies, electricity generation patterns shift and emissions of $NO_x$ associated with net exports will increase through 2005.

Efficient transmission expansion is among the presumed benefits of open access and EPA believes that the rule includes provisions encouraging such expansion.[2] The EIS analysis, however, consistently assumes that open access policies will not themselves lead to any physical changes to the transmission system. In the FEIS's modeling runs, any changes to the transmission system are applied uniformly to the base cases as well as to the rule scenarios, thereby attributing no increase in transmission capability to the rule itself.

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> Expansion cannot be efficient under a patchwork of open access transmission systems....(A) patchwork of open access systems will not result in the least cost expansion of the Nation's transmission grids. (NOPR at 70.)

Moreover, the NOPR notes that "open access transmission tariffs include an obligation to expand when necessary to accommodate third-party requirements for service." (Ibid.)

An indication of the significance of assumptions regarding transmission expansion can be derived from the FEIS's sensitivity analysis.[3] Substantial changes in generation patterns and $NO_x$ emissions emerge if some transmission expansion is attributed to the open access rule. It is possible to use the FEIS analyses to estimate changes in regional exports and $NO_x$ emissions that could be attributed to open access policies. Assuming that open access leads to a 1% annual increase in transmission capability, EPA estimates that $NO_x$ emissions associated with incremental exports would be 44,000-77,000 tons in 2000 and 58,000-75,000 tons in 2005.[4] The largest share of these emissions would occur in the critical East North Central region upwind of the OTR. In 2010, expanded transmission would lead to reduced $NO_x$ emissions of 41,000 to 62,000 tons.

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Virtually all new power plants built to meet planning reserve margins in CEUM are natural gas-fired units. These units, if dispatched as intermediate or baseload supply, compete directly with coal-fired units for a fixed share of demand (because generation from nuclear and other units is fixed in the analysis). For every billion kWh displaced from coal to combined-cycle gas generation, the CEUM model reports lower $NO_x$ emissions of 2000 tons. Hence, each gigawatt (GW) of combined-cycle gas capacity, if utilized at 60% of maximum capacity (intermediate load assumed in CEUM), will generate 5.26 bkWh of power, leading to 10,500 tons of $NO_x$ displacement.

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The difference of 1.2% between these two approaches could have important emission impacts, and further analysis of base cases and 'frozen efficiency' reference cases could have still further impacts. The marked decline in reserve margins did not begin until 1992, with 10-year projected capacity margins prior to EPAct remaining at consistent 20-25% levels (Table 6-4, FEIS at 6-14. See also NERC 1989 Reliability Assessment for pre-EPAct projections). Whether such levels would be maintained in the absence of a robust wholesale market, or would show a modest decline due to other factors, can be reasonably debated. The 17% average planning reserve margin assumed in the 'frozen efficiency' reference cases, and the implied 4% change attributable to wholesale market developments over a decade (to the 13% assumed in the rule scenarios), are entirely reasonable.

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The precise effect of a 1.2% change in national average planning reserve margins on $NO_x$ emissions cannot be precisely estimated without using the model, but would appear to fall into the following ranges: 20,000-45,000 tons in 2000, 50,000-65,000 tons in 2005, and 70,000-110,000 tons in 2010. These are national, annual estimates.

**Increased Generation of Electricity.** The FERC analysis assumes that electricity demand in the United States will be the same with or without the open access rule. The FERC's use of the same electricity demand in all of their model runs implies either that the savings produced by the open access rule will not be passed on to consumers, or that consumers facing lower electricity prices will not increase the amount of electricity they consume. At the same time the FERC estimates that there will be economic benefits from the rule that are between $4.0 to $5.4 billion in 2005.

Experts on the impacts of utility deregulation are divided on what will actually occur in the future. Many experts believe actions like the open access rule will foster a competitive environment that will lead to significant reductions in electricity prices in many parts of the country for most classes of customers. A more competitive environment under the supervision of state public utility commissions should lead to utilities lowering their electricity prices as they cut costs through wholesale power purchases. In recent comments to EPA, a major electric utility trade organization has strongly made this point.[5] Over the last three years, ELCON, a leading advocacy group for increased competition, has promoted utility deregulation because it has seen competition as a very effective means of lowering electricity prices in many areas of the country. A major study recently published by nationally-recognized utility experts offers several scenarios for how utility deregulation may occur, and the scenarios providing for successful deregulation show price decreases in electricity.[6]

The issue becomes more complicated, however, due to expected efforts by utilities to recover the costs of 'stranded' or uneconomic assets, especially nuclear units. Some experts believe that the resolution of this issue may limit savings for consumers in many parts of the country in the near future. Yet, the FERC analysis does not make any assumptions about such cost recovery, nor does it show early retirement of nuclear units or other types of units, except older oil and gas steam units. It is plausible, based on the FEIS scenarios, to believe that the open access rule may create significant economic savings that would be passed on to consumers.

Based on EPA's review of available information on the impacts of increased competition and discussions with utility industry experts, EPA believes it could be reasonably assumed that reductions in future prices are likely. The FERC could have considered potential increases in electric demand that would have resulted from the pass-through to consumers of the savings produced by the open access rule. The results of EPA's analysis of the potential impacts of increased electric demand appear in Table 2 below. The major assumptions in the analysis included:

- Rule produces annual saving of fixed O&M, variable costs (e.g. fuel), and capital expenses of $3.6, $5.4, and $6.6 billion in years 2000, 2005, and 2010, respectively. (Used upper bound estimate of FEIS (Table ES-4, FEIS at ES-15.) for 2005. Assumed that the benefits in 2000 and 2010 were proportional to the amount of increased savings in variable and capital costs that the FEIS estimated would occur.)
- Utilities pass-through between 50 to 90 percent of the economic benefits of the rule.
- The average price elasticity of electricity demand is in the range of .3 to .6.[7]

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[5] In an May 7, 1996 letter to EPA Assistant Administrator for Air and Radiation Mary D. Nichols (Comments of the Utility Air Regulatory Group on EPA's Clean Air Power Initiative), the Utility Air Regulatory Group discusses the economic benefits of competition, stating "that those projected benefits are expected to flow to the consuming public."

[6] Cambridge Energy Research Associates, Reshaping the North American Electric Power Industry: Scenarios to 2010, 1996.

[7] This range resulted from personal communications with utility experts at CERA, review of assumptions DRI uses in its energy modeling and a literature review done by ICF Resources for EPA. Note that there is a range of opinion among energy experts on the price elasticity of electricity, with some experts believing that in the short-run it is well below .3, possibly even 0.

- The future average electricity price would have been about $.07 per kilowatt hour before price reductions resulting from competition.[8]

- Electric power generation in the U.S. under full competition would be 3.46, 3.78, and 4.13 trillion kWh in 2000, 2005, and 2010, respectively (from FERC FEIS).

- The losses in the transmission and distribution of electricity are about seven percent of generation levels.

- Every billion kWh of power generated produces 1,100 tons of NOx (national average derived from FEIS between 2000 and 2005).

**Table 2**
**Increases in Annual NOx Emissions when Higher Electricity Sales Result from the Open Access Rule**
**(1000 tons)**

| Year | Low | High |
|---|---|---|
| 2000 | 9 | 31 |
| 2005 | 13 | 46 |
| 2010 | 16 | 57 |

**Increased Emissions from Improved Heat Rate Maintenance.** The FEIS assumes that the open access rule leads electric utilities to maintain the heat rates at coal-fired generating units at constant levels. Over the 15-year horizon of the FERC's analysis, this assumption about heat rate maintenance has a significant influence on the FEIS estimate of the increases in $NO_x$ emissions that result from the open access rule.

Although utilities are also striving to be more competitive under the base cases, the FERC assumes that without the open access rule utilities will continue their past practice of allowing the heat rates of their coal-fired units to decline about .25 percent per year. This assumption in the High-Price-Differential Base Case leads to a .25 percent annual increase in $NO_x$ emissions from coal-fired units each year as they consume more fuel (and generate more $NO_x$) each year to produce the same amount of electricity. EPA believes that most, if not all, utilities facing a more competitive environment are unlikely to behave this way, especially since the FEIS suggests that actions to maintain heat rates at coal-fired units have negligible costs.

To estimate the significance of the FERC's current assumption, we considered the difference that would occur if the FERC had assumed that 50 to 100 percent of all coal-fired units would have maintained their existing heat rates under the base case without the open access rule. As part of this analysis, EPA considered how future life extension activities covered in the FERC analysis can temporarily improve heat rates in some cases. EPA also examined the influence that this assumption change could have on the High-Price-Differential Base Case itself. EPA wanted to determine whether the maintenance of heat rates by coal-fired units led to greater usage levels of coal-fired units in this baseline.

Based on an examination of the FERC's modeling assumptions and actual model runs in which coal-fired units have their facility lives extended, EPA reduced estimated $NO_x$ increases resulting from changes in heat rate assumptions by 5 percent. EPA also found that the relative improvement in the variable costs of operation through heat rate maintenance was unlikely to have much influence on the relative shares of generation provided by coal- and gas-fired units in the baseline. This conclusion is based on the very large variable cost advantage coal-fired units already enjoy over most oil/gas-fired units in competing to fill the same types of load demands in various parts of the country. From this assessment, EPA prepared estimates that are provided in Table 3 of the potential increases in annual $NO_x$ emissions (compared to the High-Price-Differential Base Case) resulting from changing the heat rate assumptions.

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[8] Energy Information Administration, Annual Energy Outlook 1996, January 1996.

**Table 3**
**Potential Increases in $NO_x$ Emissions Due to Changes in Heat Rate Assumptions**
**(1000 tons)**

| Year | Low | High |
|---|---|---|
| 2000 | 30 | 60 |
| 2005 | 65 | 129 |
| 2010 | 102 | 204 |

## ADDITIONAL UNCERTAINTIES IN MODELING COMPETITION

The FEIS considers the difference that the open access rule makes in increasing the level of competition in wholesale power markets over time. In both the base case with competition and the cases where the open access rule is implemented, the main beneficiaries of the competitive environment are coal-fired units, largely displacing combined-cycle gas units that currently exist or could have been built to meet future increases in demand. The improved competitiveness of coal-fired units is considered through assumptions related to their ability to operate at higher utilization rates and to respond to lower transmission charges over time. These assumptions are critical to growth in the use of coal-fired electric generation capacity over time, but are highly uncertain.

The FERC made reasonable judgments in this area given the lack of information that exists regarding actual transmission charges and other key elements in transmission contracts, and how much further coal-fired units can go in improving their capacity availability on a regular basis. In fact, the transmission charges that the FERC assumed existed in the base cases were developed by estimating how large they would have been in 1993 on various major electric transmission lines in order to produce generation levels like those actually reported. The FERC did not consider whether other factors could have influenced generation levels and interregional power transfers, or whether 1993 was a sound "representative" year to use in such an effort. Over the last 10 years, 1993 is unique in having had the largest differential between coal and gas prices delivered to utilities[9]. EPA believes that other plausible assumptions could have been made about transmission charges and capacity availability over time that could have led to different results.

The assumptions that the FERC made led to a baseline situation where coal-fired unit utilization moves from 62 percent in 1993 (the year that the FERC used to establish their transmission charges) to 70 percent in 2000 and 76 percent in 2005. This occurs as they assume a steady decline from 1993 of the transmission charges and a steady increase of the capacity availability of coal-fired units until 2005 (where the capacity availability limit is assumed to be 85 percent of the hours in a year). Under the open access rule, the FEIS assumed a very rapid drop in transmission charges and a large increase in capacity availability by 2005 (90 percent capacity availability). The FERC's assumptions led to the conclusion that the open access rule would increase coal-fired unit utilization to 72 percent and 78 percent in 2000 and 2005, respectively. There is thus a difference of 2 percent in the utilization of coal-fired capacity between the two cases. This 2 percent difference led to an increase of over 90,000 tons of $NO_x$ emissions in 2000 -- a 45,000 ton increase per one percent increase in coal use. This amount varies to some extent between model runs.

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[9] See FEIS, Appendix G, Figure G-2.

It is quite conceivable that without the open access rule, there would be less than an 8 percent increase in coal-fired capacity utilization by 2000. In 1994, coal-fired unit utilization at utilities remained at 62 percent and EPA estimates that it was 62.5 percent in 1995.[10,11] Only modest gains in coal-fired capacity utilization have occurred in the last two years without the open access rule.

It is also possible that coal-fired units could be used to a greater degree due to the rule's speeding up utilities' actions to improve the capacity availability of coal-fired units. The assumptions the FERC made about 85 percent capacity availability in 2005 were a binding constraint for a very large percentage of the coal-fired units. Close to 40 percent of U.S. coal-fired capacity has been operating at levels higher than 85 percent over the last 5 years.[12] If the difference in the utilization of coal-fired generation units in the High-Price-Differental Base Case and cases with the rule in effect was another 2 percent greater than reported in the FEIS, that alone could potentially lead to a doubling of the increase of $NO_x$ emissions to 182,000 tons in the year 2000.

Coal plant utilization is a model output, not an input assumption. These issues are not raised in order to defend any position or estimate of future coal plant utilization *per se*; rather, the point is that this model result stems from the collective impact of all the assumed inputs, and signals the overall flexibility of the utility system in response to the scenarios analyzed. EPA is concerned that overall, insufficient flexibility has been built into the FEIS analysis, and emphasizes the importance of the remaining uncertainties regarding the future of the utility sector as it responds to wholesale and other competitive pressures.

## CONCLUSIONS

In conducting this review of the FEIS, EPA examined the most critical assumptions in the FERC analysis. EPA believes that the EIS process and the products produced by FERC staff have contributed to a broader discussion and understanding of the environmental impacts of open access.

EPA's review suggests that relatively modest changes in some key assumptions can lead to estimated $NO_x$ emissions that are notably larger than found in the FEIS rule scenarios. Table 4 below summarizes the results of EPA's assessment. The results show that in 2005 reasonable changes in four key variables can result in $NO_x$ increases comparable in scale to the increases that FERC attributed to the open access rule in the Competition Favors Coal scenario (which EPA believes is the best point of departure for considering how large the impacts of the open access rule are likely to be). Because of the complex interactions between assumptions and the likelihood of overlap between some of these actors, it should be noted that Table 4's results are not additive

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[10] Energy Information Administration, Electric Power Annual 1994, 1995.

[11] EPA prepared estimate from information available in EIA's Annual Energy Outlook 1996 and Electric Power Monthly January 1996.

[12] North American Electric Reliability Council, Generating Availability Data System, electronic data base, 1996.

### Table 4.
### Summary of Key Assumptions and Potential Increases in $NO_x$ Emissions (1000 Tons) (These Results are not Additive)

| | 2000 | 2005 | 2010 |
|---|---|---|---|
| Transmission Expansion | 44-75 | 58-75 | (41)-(61) |
| Planning Reserve Margins | 20-45 | 50-65 | 70-110 |
| Price Response | 9-31 | 13-46 | 16-57 |
| Heat Rates | 30-60 | 65-129 | 102-204 |

Without running the CEUM model, it is not possible to determine with precision how these assumptions would play out dynamically, either in isolation or in combination. The FEIS projects that significant adverse impacts (if they develop) could not appear in the immediate future, but could take place over a longer time frame. EPA believes that such adverse impacts could develop more rapidly than the FEIS indicates, and could be of greater magnitude. However, these impacts could be averted by appropriate mitigation actions by EPA, the States and the FERC, acting under their respective authorities.

The FEIS, and EPA's supplemental work, is designed to indicate reasonably possible outcomes of open access policies. The concerns identified here do not contradict the main tenets of the FEIS, but indicate that our understanding of potential impacts is still limited and subject to uncertainty.

## FERC ASSUMPTIONS FOR DEMAND SIDE MANAGEMENT PROGRAMS

Question: d). FERC assumed that demand side management programs would continue at present levels. Yet as electricity rates drop, DSM programs will become less cost-effective and hence decline, thereby increasing demand for generated electricity. Analytically, co-generation was treated comparably. Do these tend to understate generation demand and therefore pollution?

Answer: EPA believes that the assumptions about DSM and cogeneration are implicit in the FERC analysis, since electricity demand and generation levels are the same in the base case and policy option cases. We believe that these assumptions may be understating generation demand and therefore pollution. EPA addressed this issue in its Technical Analysis, which is attached. (See page 5 section entitled "Increased Generation of Electricity.")

## Technical Analysis of FERC Final Environmental Impact Statement on Open Access Rule (Order 888)

This report summarizes EPA's technical analysis of the Federal Energy Regulatory Commission's (FERC's) Final Environmental Impact Statement (FEIS) with regard to its open access rulemaking in Docket No. RM95-8-000.

EPA believes that the FEIS provides a credible basis for understanding the possible environmental impacts of the open access rule. EPA believes that the FERC selected appropriate analytic models, designed several informative policy scenarios and responded to the concerns that EPA raised with the draft EIS. However, after reviewing the FEIS and its underlying input assumptions in detail, EPA concludes that there are several key assumptions that drive the results on $NO_x$ emissions which could have been specified differently. Other reasonable assumptions in these areas could have led the FERC to attribute greater potential $NO_x$ increases to the open access rule.

## ANALYTIC ASSUMPTIONS

EPA believes that the FEIS High-Price-Differential Base Case, in combination with the Competition-Favors-Coal rule scenario, provides the most reasonable starting point for analyzing potential increases in $NO_x$ emissions from the open access rule.[1] The increases in $NO_x$ levels from the open access rule are likely to be at least as large as these scenarios suggest. This belief is based on our review of the assumptions the FERC used in these cases for delivered fuel prices for coal and natural gas through 2010, which are critical determinants of how much electric generation will come from coal and gas-fired units in the future. EPA believes that the fuel price assumptions underlying the High-Price-Differential Base Case and the Competition-Favors Coal rule scenario are the closest to what several leading energy experts relied on by EPA are now forecasting. Although these assumptions show a negative environmental impact from the open access rule, EPA recognizes that if relative fuel prices and technological improvements were more favorable for gas, the open access rule could lead to positive environmental benefits.

The Competition-Favors-Coal rule scenario, when compared with the High-Price-Differential Base Case, leads to projected increases in $NO_x$ emissions from the rule of 91,000, 55,000, and 93,000 tons in 2000, 2005, and 2010, respectively. EPA believes that some adjustments to this case are warranted to address analytic concerns discussed below in this paper. Such adjustments could show that the rule has the potential to cause much larger impacts than the FEIS estimates for the Competition-Favors-Coal rule scenario. In identifying these areas of concern, EPA did not attempt to devise a set of revised assumptions that provide a worst-case scenario. Such a case could imply increases in $NO_x$ emissions above the levels that are suggested in EPA's analysis below.

## ISSUES IN THE FEIS ANALYSIS

EPA undertook a broad investigation of assumptions in the FEIS that might significantly affect its conclusions regarding $NO_x$ emissions. We recognize that many judgments are required in an analytical exercise such as this FEIS and that reasonable people may disagree regarding which assumptions are appropriate. Below, we explain the results of our analysis of several issues where we substituted other reasonable assumptions that the FERC could have made for those in the FEIS. We describe the results of our analysis only for those adjustments which we found to significantly affect projected $NO_x$ emissions. Other adjustments we analyzed, where effects did not appear to be significant (or where the FEIS assumptions provide the best available treatment), include the FERC's use of: outdated $NO_x$ emission factors, older heat rate information than is now available on fossil unit performance, capital costs for new power plants, and possible changes in nuclear generator operation.

A word of caution is in order regarding this analysis. Due to time and resource constraints, we were unable to undertake any additional modeling runs. Our conclusions are thus based on a review of the FEIS itself and of data from specific model runs performed for the FEIS, using spreadsheet analyses. We believe it is possible to draw tentative conclusions from this analysis about the effects of individually changing certain key assumptions. However, it is not possible, using this approach to reliably estimate the joint impact on $NO_x$ emissions of changing several assumptions simultaneously. Thus, we are not presenting here the overall level of $NO_x$ emissions that would result from modeling runs if a different set of assumptions were substituted for those used in the FEIS.

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[1] Notably this large price differential is much smaller than leading forecasters were saying the difference would be 2 to 3 years ago.

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The essential point is that relatively small (1-2%) changes in these assumptions can result in $NO_x$ emissions impacts on a scale of tens of thousands of tons per year. Limiting the open access rule's effect on planning reserve margins to a constant 2% over fifteen years is a constraint which affects the FEIS results. For the purposes of this analysis, the impact of applying a 13% planning reserve margin as specified in the FEIS scenarios, instead of the 14.2% actually used in the model, is estimated for the Competition-Favors-Coal scenario. These estimated emission changes would be attributable to the rule only if one assumes no change in the assumptions for the baseline.

The precise effect of a 1.2% change in national average planning reserve margins on $NO_x$ emissions cannot be precisely estimated without using the model, but would appear to fall into the following ranges: 20,000-45,000 tons in 2000, 50,000-65,000 tons in 2005, and 70,000-110,000 tons in 2010. These are national, annual estimates.

**Increased Generation of Electricity.** The FERC analysis assumes that electricity demand in the United States will be the same with or without the open access rule. The FERC's use of the same electricity demand in all of their model runs implies either that the savings produced by the open access rule will not be passed on to consumers, or that consumers facing lower electricity prices will not increase the amount of electricity they consume. At the same time the FERC estimates that there will be economic benefits from the rule that are between $4.0 to $5.4 billion in 2005.

Experts on the impacts of utility deregulation are divided on what will actually occur in the future. Many experts believe actions like the open access rule will foster a competitive environment that will lead to significant reductions in electricity prices in many parts of the country for most classes of customers. A more competitive environment under the supervision of state public utility commissions should lead to utilities lowering their electricity prices as they cut costs through wholesale power purchases. In recent comments to EPA, a major electric utility trade organization has strongly made this point.[5] Over the last three years, ELCON, a leading advocacy group for increased competition, has promoted utility deregulation because it has seen competition as a very effective means of lowering electricity prices in many areas of the country. A major study recently published by nationally-recognized utility experts offers several scenarios for how utility deregulation may occur, and the scenarios providing for successful deregulation show price decreases in electricity.[6]

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The issue becomes more complicated, however, due to expected efforts by utilities to recover the costs of 'stranded' or uneconomic assets, especially nuclear units. Some experts believe that the resolution of this issue may limit savings for consumers in many parts of the country in the near future. Yet, the FERC analysis does not make any assumptions about such cost recovery, nor does it show early retirement of nuclear units or other types of units, except older oil and gas steam units. It is plausible, based on the FEIS scenarios, to believe that the open access rule may create significant economic savings that would be passed on to consumers.

Based on EPA's review of available information on the impacts of increased competition and discussions with utility industry experts, EPA believes it could be reasonably assumed that reductions in future prices are likely. The FERC could have considered potential increases in electric demand that would have resulted from the pass-through to consumers of the savings produced by the open access rule. The results of EPA's analysis of the potential impacts of increased electric demand appear in Table 2 below. The major assumptions in the analysis included:

- Rule produces annual saving of fixed O&M, variable costs (e.g. fuel), and capital expenses of \$3.6, \$5.4, and \$6.6 billion in years 2000, 2005, and 2010, respectively. (Used upper bound estimate of FEIS (Table ES-4, FEIS at ES-15.) for 2005. Assumed that the benefits in 2000 and 2010 were proportional to the amount of increased savings in variable and capital costs that the FEIS estimated would occur.)

- Utilities pass-through between 50 to 90 percent of the economic benefits of the rule.

- The average price elasticity of electricity demand is in the range of .3 to .6.[7]

- The future average electricity price would have been about \$.07 per kilowatt hour before price reductions resulting from competition.[8]

- Electric power generation in the U.S. under full competition would be 3.46, 3.78, and 4.13 trillion kWh in 2000, 2005, and 2010, respectively (from FERC FEIS).

- The losses in the transmission and distribution of electricity are about seven percent of generation levels.

- Every billion kWh of power generated produces 1,100 tons of NOx (national average derived from FEIS between 2000 and 2005).

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[6] Cambridge Energy Research Associates, Reshaping the North American Electric Power Industry: Scenarios to 2010, 1996.

[7] This range resulted from personal communications with utility experts at CERA, review of assumptions DRI uses in its energy modeling and a literature review done by ICF Resources for EPA. Note that there is a range of opinion among energy experts on the price elasticity of electricity, with some experts believing that in the short-run it is well below .3, possibly even 0.

[8] Energy Information Administration, Annual Energy Outlook 1996, January 1996.

**Table 2**
**Increases in Annual NOx Emissions when Higher Electricity Sales Result from the Open Access Rule**
**(1000 tons)**

| Year | Low | High |
|---|---|---|
| 2000 | 9 | 31 |
| 2005 | 13 | 46 |
| 2010 | 16 | 57 |

**Increased Emissions from Improved Heat Rate Maintenance.** The FEIS assumes that the open access rule leads electric utilities to maintain the heat rates at coal-fired generating units at constant levels. Over the 15-year horizon of the FERC's analysis, this assumption about heat rate maintenance has a significant influence on the FEIS estimate of the increases in $NO_x$ emissions that result from the open access rule.

Although utilities are also striving to be more competitive under the base cases, the FERC assumes that without the open access rule utilities will continue their past practice of allowing the heat rates of their coal-fired units to decline about .25 percent per year. This assumption in the High-Price-Differential Base Case leads to a .25 percent annual increase in $NO_x$ emissions from coal-fired units each year as they consume more fuel (and generate more $NO_x$) each year to produce the same amount of electricity. EPA believes that most, if not all, utilities facing a more competitive environment are unlikely to behave this way, especially since the FEIS suggests that actions to maintain heat rates at coal-fired units have negligible costs.

To estimate the significance of the FERC's current assumption, we considered the difference that would occur if the FERC had assumed that 50 to 100 percent of all coal-fired units would have maintained their existing heat rates under the base case without the open access rule. As part of this analysis, EPA considered how future life extension activities covered in the FERC analysis can temporarily improve heat rates in some cases. EPA also examined the influence that this assumption change could have on the High-Price-Differential Base Case itself. EPA wanted to determine whether the maintenance of heat rates by coal-fired units led to greater usage levels of coal-fired units in this baseline.

Based on an examination of the FERC's modeling assumptions and actual model runs in which coal-fired units have their facility lives extended, EPA reduced estimated $NO_x$ increases resulting from changes in heat rate assumptions by 5 percent. EPA also found that the relative improvement in the variable costs of operation through heat rate maintenance was unlikely to have much influence on the relative shares of generation provided by coal- and gas-fired units in the baseline. This conclusion is based on the very large variable cost advantage coal-fired units already enjoy over most oil/gas-fired units in competing to fill the same types of load demands in various parts of the country. From this assessment, EPA prepared estimates that are provided in Table 3 of the potential increases in annual $NO_x$ emissions (compared to the High-Price-Differential Base Case) resulting from changing the heat rate assumptions.

**Table 3**
**Potential Increases in $NO_x$ Emissions Due to Changes in Heat Rate Assumptions**
**(1000 tons)**

| Year | Low | High |
|---|---|---|
| 2000 | 30 | 60 |
| 2005 | 65 | 129 |
| 2010 | 102 | 204 |

## ADDITIONAL UNCERTAINTIES IN MODELING COMPETITION

The FEIS considers the difference that the open access rule makes in increasing the level of competition in wholesale power markets over time. In both the base case with competition and the cases where the open access rule is implemented, the main beneficiaries of the competitive environment are coal-fired units, largely displacing combined-cycle gas units that currently exist or could have been built to meet future increases in demand. The improved competitiveness of coal-fired units is considered through assumptions related to their ability to operate at higher utilization rates and to respond to lower transmission charges over time. These assumptions are critical to growth in the use of coal-fired electric generation capacity over time, but are highly uncertain.

The FERC made reasonable judgments in this area given the lack of information that exists regarding actual transmission charges and other key elements in transmission contracts, and how much further coal-fired units can go in improving their capacity availability on a regular basis. In fact, the transmission charges that the FERC assumed existed in the base cases were developed by estimating how large they would have been in 1993 on various major electric transmission lines in order to produce generation levels like those actually reported. The FERC did not consider whether other factors could have influenced generation levels and interregional power transfers, or whether 1993 was a sound "representative" year to use in such an effort. Over the last 10 years, 1993 is unique in having had the largest differential between coal and gas prices delivered to utilities[9]. EPA believes that other plausible assumptions could have been made about transmission charges and capacity availability over time that could have led to different results.

The assumptions that the FERC made led to a baseline situation where coal-fired unit utilization moves from 62 percent in 1993 (the year that the FERC used to establish their transmission charges) to 70 percent in 2000 and 76 percent in 2005. This occurs as they assume a steady decline from 1993 of the transmission charges and a steady increase of the capacity availability of coal-fired units until 2005 (where the capacity availability limit is assumed to be 85 percent of the hours in a year). Under the open access rule, the FEIS assumed a very rapid drop in transmission charges and a large increase in capacity availability by 2005 (90 percent capacity availability). The FERC's assumptions led to the conclusion that the open access rule would increase coal-fired unit utilization to 72 percent and 78 percent in 2000 and 2005, respectively. There is thus a difference of 2 percent in the utilization of coal-fired capacity between the two cases. This 2 percent difference led to an increase of over 90,000 tons of $NO_x$ emissions in 2000 -- a 45,000 ton increase per one percent increase in coal use. This amount varies to some extent between model runs.

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[9] See FEIS, Appendix G, Figure G-2.

**It is quite conceivable that without the open access rule, there would be less than an 8 percent increase in coal-fired capacity utilization by 2000. In 1994, coal-fired unit utilization at utilities remained at 62 percent and EPA estimates that it was 62.5 percent in 1995.[10,11] Only modest gains in coal-fired capacity utilization have occurred in the last two years without the open access rule.**

It is also possible that coal-fired units could be used to a greater degree due to the rule's speeding up utilities' actions to improve the capacity availability of coal-fired units. The assumptions the FERC made about 85 percent capacity availability in 2005 were a binding constraint for a very large percentage of the coal-fired units. Close to 40 percent of U.S. coal-fired capacity has been operating at levels higher than 85 percent over the last 5 years.[12] If the difference in the utilization of coal-fired generation units in the High-Price-Differental Base Case and cases with the rule in effect was another 2 percent greater than reported in the FEIS, that alone could potentially lead to a doubling of the increase of $NO_x$ emissions to 182,000 tons in the year 2000.

Coal plant utilization is a model output, not an input assumption. These issues are not raised in order to defend any position or estimate of future coal plant utilization *per se*; rather, the point is that this model result stems from the collective impact of all the assumed inputs, and signals the overall flexibility of the utility system in response to the scenarios analyzed. EPA is concerned that overall, insufficient flexibility has been built into the FEIS analysis, and emphasizes the importance of the remaining uncertainties regarding the future of the utility sector as it responds to wholesale and other competitive pressures.

## CONCLUSIONS

In conducting this review of the FEIS, EPA examined the most critical assumptions in the FERC analysis. EPA believes that the EIS process and the products produced by FERC staff have contributed to a broader discussion and understanding of the environmental impacts of open access.

EPA's review suggests that relatively modest changes in some key assumptions can lead to estimated $NO_x$ emissions that are notably larger than found in the FEIS rule scenarios. Table 4 below summarizes the results of EPA's assessment. The results show that in 2005 reasonable changes in four key variables can result in $NO_x$ increases comparable in scale to the increases that FERC attributed to the open access rule in the Competition Favors Coal scenario (which EPA believes is the best point of departure for considering how large the impacts of the open access rule are likely to be). Because of the complex interactions between assumptions and the likelihood of overlap between some of these actors, it should be noted that Table 4's results are not additive

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[10] Energy Information Administration, Electric Power Annual 1994, 1995.

[11] EPA prepared estimate from information available in EIA's Annual Energy Outlook 1996 and Electric Power Monthly January 1996.

[12] North American Electric Reliability Council, Generating Availability Data System, electronic data base, 1996.

### Table 4.
### Summary of Key Assumptions and Potential Increases in $NO_x$ Emissions (1000 Tons) (These Results are not Additive)

| | 2000 | 2005 | 2010 |
|---|---|---|---|
| Transmission Expansion | 44-75 | 58-75 | (41)-(61) |
| Planning Reserve Margins | 20-45 | 50-65 | 70-110 |
| Price Response | 9-31 | 13-46 | 16-57 |
| Heat Rates | 30-60 | 65-129 | 102-204 |

Without running the CEUM model, it is not possible to determine with precision how these assumptions would play out dynamically, either in isolation or in combination. The FEIS projects that significant adverse impacts (if they develop) could not appear in the immediate future, but could take place over a longer time frame. EPA believes that such adverse impacts could develop more rapidly than the FEIS indicates, and could be of greater magnitude. However, these impacts could be averted by appropriate mitigation actions by EPA, the States and the FERC, acting under their respective authorities.

The FEIS, and EPA's supplemental work, is designed to indicate reasonably possible outcomes of open access policies. The concerns identified here do not contradict the main tenets of the FEIS, but indicate that our understanding of potential impacts is still limited and subject to uncertainty.

LIST OF INCORRECT FERC ASSUMPTIONS

Question: Please provide a list of other areas where the staff of the U.S. Environmental Protection Agency believes incorrect assumptions may have been made. Please adjust a model -- not necessarily that used by the Commission -- to reflect (a) continued operation of coal-fired powerplants beyond the age of 60 at (b) maximum capacity with (c) a decline in the contributions of nuclear, DSM and co-generation and (d) technological improvements that allow significant increases in transmission capacity corridors combined with (e) appropriate adjustments in other modeling assumptions. Based on the adjusted model, please provide information on projected increases or decreases in oxides of nitrogen (and ozone), fine particulate (direct and indirect), and mercury plus other heavy metals, as well as carbon dioxide.

Answer: EPA did not conclude that FERC made incorrect assumptions in its analysis that would have changed the conclusions in the EIS. The Agency does believe that other reasonable assumptions could have been made in certain areas in the analysis and that greater sensitivity analysis could have been done. This is explained in the enclosed Technical Analysis.

EPA does not have a single model that can look at all the pollutants in the way that you requested. A complete response to this request would take several months and be quite expensive to provide. We hope that the enclosed technical analysis will provide you with a sense of the effects of altering key assumptions in FERC's FEIS. We are also carrying out analysis under the Clean Air Power Initiative.

## Technical Analysis of FERC Final Environmental Impact Statement on Open Access Rule (Order 888)

This report summarizes EPA's technical analysis of the Federal Energy Regulatory Commission's (FERC's) Final Environmental Impact Statement (FEIS) with regard to its open access rulemaking in Docket No. RM95-8-000.

EPA believes that the FEIS provides a credible basis for understanding the possible environmental impacts of the open access rule. EPA believes that the FERC selected appropriate analytic models, designed several informative policy scenarios and responded to the concerns that EPA raised with the draft EIS. However, after reviewing the FEIS and its underlying input assumptions in detail, EPA concludes that there are several key assumptions that drive the results on $NO_x$ emissions which could have been specified differently. Other reasonable assumptions in these areas could have led the FERC to attribute greater potential $NO_x$ increases to the open access rule.

## ANALYTIC ASSUMPTIONS

EPA believes that the FEIS High-Price-Differential Base Case, in combination with the Competition-Favors-Coal rule scenario, provides the most reasonable starting point for analyzing potential increases in $NO_x$ emissions from the open access rule.[1] The increases in $NO_x$ levels from the open access rule are likely to be at least as large as these scenarios suggest. This belief is based on our review of the assumptions the FERC used in these cases for delivered fuel prices for coal and natural gas through 2010, which are critical determinants of how much electric generation will come from coal and gas-fired units in the future. EPA believes that the fuel price assumptions underlying the High-Price-Differential Base Case and the Competition-Favors Coal rule scenario are the closest to what several leading energy experts relied on by EPA are now forecasting. Although these assumptions show a negative environmental impact from the open access rule, EPA recognizes that if relative fuel prices and technological improvements were more favorable for gas, the open access rule could lead to positive environmental benefits.

The Competition-Favors-Coal rule scenario, when compared with the High-Price-Differential Base Case, leads to projected increases in $NO_x$ emissions from the rule of 91,000, 55,000, and 93,000 tons in 2000, 2005, and 2010, respectively. EPA believes that some adjustments to this case are warranted to address analytic concerns discussed below in this paper. Such adjustments could show that the rule has the potential to cause much larger impacts than the FEIS estimates for the Competition-Favors-Coal rule scenario. In identifying these areas of concern, EPA did not attempt to devise a set of revised assumptions that provide a worst-case scenario. Such a case could imply increases in $NO_x$ emissions above the levels that are suggested in EPA's analysis below.

## ISSUES IN THE FEIS ANALYSIS

EPA undertook a broad investigation of assumptions in the FEIS that might significantly affect its conclusions regarding $NO_x$ emissions. We recognize that many judgments are required in an analytical exercise such as this FEIS and that reasonable people may disagree regarding which assumptions are appropriate. Below, we explain the results of our analysis of several issues where we substituted other reasonable assumptions that the FERC could have made for those in the FEIS. We describe the results of our analysis only for those adjustments which we found to significantly affect projected $NO_x$ emissions. Other adjustments we analyzed, where effects did not appear to be significant (or where the FEIS assumptions provide the best available treatment), include the FERC's use of: outdated $NO_x$ emission factors, older heat rate information than is now available on fossil unit performance, capital costs for new power plants, and possible changes in nuclear generator operation.

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[1] Notably this large price differential is much smaller than leading forecasters were saying the difference would be 2 to 3 years ago.

A word of caution is in order regarding this analysis. Due to time and resource constraints, we were unable to undertake any additional modeling runs. Our conclusions are thus based on a review of the FEIS itself and of data from specific model runs performed for the FEIS, using spreadsheet analyses. We believe it is possible to draw tentative conclusions from this analysis about the effects of individually changing certain key assumptions. However, it is not possible, using this approach to reliably estimate the joint impact on $NO_x$ emissions of changing several assumptions simultaneously. Thus, we are not presenting here the overall level of $NO_x$ emissions that would result from modeling runs if a different set of assumptions were substituted for those used in the FEIS.

**Transmission expansion.** At EPA's request, the FERC conducted a sensitivity analysis of transmission expansion in the final EIS. While the FERC concluded that the effect of substantial increases in transmission capacity were "very slight," EPA interprets the results of this sensitivity differently. EPA continues to believe that the treatment of transmission in the EIS is inconsistent with the policy the Commission has proposed with regard to transmission. It is reasonable to conclude from the FEIS that if a modest expansion of the transmission system (including upgrades of existing facilities) is attributed to open access policies, electricity generation patterns shift and emissions of $NO_x$ associated with net exports will increase through 2005.

Efficient transmission expansion is among the presumed benefits of open access and EPA believes that the rule includes provisions encouraging such expansion.[2] The EIS analysis, however, consistently assumes that open access policies will not themselves lead to any physical changes to the transmission system. In the FEIS's modeling runs, any changes to the transmission system are applied uniformly to the base cases as well as to the rule scenarios, thereby attributing no increase in transmission capability to the rule itself.

An indication of the significance of assumptions regarding transmission expansion can be derived from the FEIS's sensitivity analysis.[3] Substantial changes in generation patterns and $NO_x$ emissions emerge if some transmission expansion is attributed to the open access rule. It is possible to use the FEIS analyses to estimate changes in regional exports and $NO_x$ emissions that could be attributed to open access policies. Assuming that open access leads to a 1% annual increase in transmission capability, EPA estimates that $NO_x$ emissions associated with incremental exports would be 44,000-77,000 tons in 2000 and 58,000-75,000 tons in 2005.[4] The largest share of these emissions would occur in the critical East North Central region upwind of the OTR. In 2010, expanded transmission would lead to reduced $NO_x$ emissions of 41,000 to 62,000 tons.

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[2] In discussing the rationale for the FERC's open access policy, the NOPR explains that

> Expansion cannot be efficient under a patchwork of open access transmission systems....(A) patchwork of open access systems will not result in the least cost expansion of the Nation's transmission grids. (NOPR at 70.)

Moreover, the NOPR notes that "open access transmission tariffs include an obligation to expand when necessary to accommodate third-party requirements for service." (Ibid.)

[3] Even without attributing any transmission expansion to the rule, the FEIS finds that relaxing constraints on transmission capability (in base cases as well as rule scenarios) results in sizeable shifts in generation patterns, including notable shifts from the Middle Atlantic region to the critical East North Central region which is upwind of the Northeast Ozone Transport Region (OTR). (FEIS Tables 6-24 through 6-27.)

[4] This estimate is based on emissions associated with net exports in the Competition-Favors-Coal/Expanded transmission rule scenario and the High-Price-Differential base case, with adjustments made to reflect a 1% annual increase in transmission capability attributed to open access beginning in 1995. In 2005, for example, a 10% increase in transmission capability is attributed to the rule.

**Table 1**
**Potential $NO_x$ Emissions Due to Transmission Expansion**
**(1000 tons)**

| Year | Low | High |
|---|---|---|
| 2000 | 44 | 77 |
| 2005 | 58 | 75 |
| 2010 | (41) | (62) |

**Planning reserve margins.** In the CEUM model, planning reserve margins act as the 'triggers' to build new power plants. Each region must meet its expected peak demand, plus the reserve margin, to ensure system reliability. In recent experience (since passage of EPAct in 1992), actual forecast capacity margins have been declining from historic levels of 20-25% on average. More robust wholesale markets allow for more reliance on nearby systems for emergency power, while the entrance of new, generally smaller power plants reduces the scale of emergencies caused by the unexpected loss of an individual plant.

Virtually all new power plants built to meet planning reserve margins in CEUM are natural gas-fired units. These units, if dispatched as intermediate or baseload supply, compete directly with coal-fired units for a fixed share of demand (because generation from nuclear and other units is fixed in the analysis). For every billion kWh displaced from coal to combined-cycle gas generation, the CEUM model reports lower $NO_x$ emissions of 2000 tons. Hence, each gigawatt (GW) of combined-cycle gas capacity, if utilized at 60% of maximum capacity (intermediate load assumed in CEUM), will generate 5.26 bkWh of power, leading to 10,500 tons of $NO_x$ displacement.

Changing planning reserve margin assumptions can have a variety of effects, depending on the demand characteristics and existing generating supply in each region. Some regions may build no non-peaking combined cycle units, while others build exclusively intermediate, or even baseload units (which run at 90% capacity). In detailed comparisons of CEUM output, changes of 2% in reserve margins result in 2-12 GW of combined cycle capacity changes nationwide. The impact grows over time, because growth in demand increases the effect of reserve margin requirements. In 2000, 2-5 GW of combined cycle capacity is built; by 2010, the range is 11-12 GW.

In addition to new capacity builds, different CEUM runs indicate changes in the amount of power generated by different types of power plants. It is important to note that other assumptions besides planning reserve margins can affect capacity and generation; this analysis develops ranges of possible emission impacts which take both capacity and generation changes into account. In some model runs, generation from combined cycle gas plants changes more than capacity built, while in others, it changes less.

In the FEIS analysis, baseline CEUM runs assume that planning reserve margins decline to the lower end of currently forecast ranges (generally 15-20%). In the rule scenarios, planning reserve margins were assumed to decline more quickly, reaching an overall national level of 13% by 2005. The actual execution of the model runs, however, assumed a uniform decline in each region of just 2% from the baselines to the rule scenarios. The national average planning reserve margin reaches only 14.2% (not 13%) in the CEUM rule scenarios. It is not unreasonable to assume that planning reserve margins will decline by a uniform, set percentage in each region. It is simply a different approach than assuming that planning reserve margins will converge to a uniform level that is set for all regions.

The difference of 1.2% between these two approaches could have important emission impacts, and further analysis of base cases and 'frozen efficiency' reference cases could have still further impacts. The marked decline in reserve margins did not begin until 1992, with 10-year projected capacity margins prior to EPAct remaining at consistent 20-25% levels (Table 6-4, FEIS at 6-14. See also NERC 1989 Reliability Assessment for pre-EPAct projections). Whether such levels would be maintained in the absence of a robust wholesale market, or would show a modest decline due to other factors, can be reasonably debated. The 17% average planning reserve margin assumed in the 'frozen efficiency' reference cases, and the implied 4% change attributable to wholesale market developments over a decade (to the 13% assumed in the rule scenarios), are entirely reasonable.

Planning reserve margins could decline, converge between regions, or both. These changes need to be specified for base cases as well as for rule scenarios. At present, the available information on this topic does not permit a sophisticated analysis in short order. There is currently a great deal of regional variability; it is possible that factors driving changes in reserve margins would affect base cases as well as competitive cases, leading to minimal differences in capacity, generation or emissions.

The essential point is that relatively small (1-2%) changes in these assumptions can result in $NO_x$ emissions impacts on a scale of tens of thousands of tons per year. Limiting the open access rule's effect on planning reserve margins to a constant 2% over fifteen years is a constraint which affects the FEIS results. For the purposes of this analysis, the impact of applying a 13% planning reserve margin as specified in the FEIS scenarios, instead of the 14.2% actually used in the model, is estimated for the Competition-Favors-Coal scenario. These estimated emission changes would be attributable to the rule only if one assumes no change in the assumptions for the baseline.

The precise effect of a 1.2% change in national average planning reserve margins on $NO_x$ emissions cannot be precisely estimated without using the model, but would appear to fall into the following ranges: 20,000-45,000 tons in 2000, 50,000-65,000 tons in 2005, and 70,000-110,000 tons in 2010. These are national, annual estimates.

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The issue becomes more complicated, however, due to expected efforts by utilities to recover the costs of 'stranded' or uneconomic assets, especially nuclear units. Some experts believe that the resolution of this issue may limit savings for consumers in many parts of the country in the near future. Yet, the FERC analysis does not make any assumptions about such cost recovery, nor does it show early retirement of nuclear units or other types of units, except older oil and gas steam units. It is plausible, based on the FEIS scenarios, to believe that the open access rule may create significant economic savings that would be passed on to consumers.

Based on EPA's review of available information on the impacts of increased competition and discussions with utility industry experts, EPA believes it could be reasonably assumed that reductions in future prices are likely. The FERC could have considered potential increases in electric demand that would have resulted from the pass-through to consumers of the savings produced by the open access rule. The results of EPA's analysis of the potential impacts of increased electric demand appear in Table 2 below. The major assumptions in the analysis included:

- Rule produces annual saving of fixed O&M, variable costs (e.g. fuel), and capital expenses of $3.6, $5.4, and $6.6 billion in years 2000, 2005, and 2010, respectively. (Used upper bound estimate of FEIS (Table ES-4, FEIS at ES-15.) for 2005. Assumed that the benefits in 2000 and 2010 were proportional to the amount of increased savings in variable and capital costs that the FEIS estimated would occur.)
- Utilities pass-through between 50 to 90 percent of the economic benefits of the rule.
- The average price elasticity of electricity demand is in the range of .3 to .6.[7]
- The future average electricity price would have been about $.07 per kilowatt hour before price reductions resulting from competition.[8]
- Electric power generation in the U.S. under full competition would be 3.46, 3.78, and 4.13 trillion kWh in 2000, 2005, and 2010, respectively (from FERC FEIS).
- The losses in the transmission and distribution of electricity are about seven percent of generation levels.
- Every billion kWh of power generated produces 1,100 tons of NOx (national average derived from FEIS between 2000 and 2005).

**Table 2**
**Increases in Annual NOx Emissions when**
**Higher Electricity Sales Result from the Open Access Rule**
**(1000 tons)**

| Year | Low | High |
|---|---|---|
| 2000 | 9 | 31 |
| 2005 | 13 | 46 |
| 2010 | 16 | 57 |

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[7] This range resulted from personal communications with utility experts at CERA, review of assumptions DRI uses in its energy modeling and a literature review done by ICF Resources for EPA. Note that there is a range of opinion among energy experts on the price elasticity of electricity, with some experts believing that in the short-run it is well below .3, possibly even 0.

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**Increased Emissions from Improved Heat Rate Maintenance.** The FEIS assumes that the open access rule leads electric utilities to maintain the heat rates at coal-fired generating units at constant levels. Over the 15-year horizon of the FERC's analysis, this assumption about heat rate maintenance has a significant influence on the FEIS estimate of the increases in $NO_x$ emissions that result from the open access rule.

Although utilities are also striving to be more competitive under the base cases, the FERC assumes that without the open access rule utilities will continue their past practice of allowing the heat rates of their coal-fired units to decline about .25 percent per year. This assumption in the High-Price-Differential Base Case leads to a .25 percent annual increase in $NO_x$ emissions from coal-fired units each year as they consume more fuel (and generate more $NO_x$) each year to produce the same amount of electricity. EPA believes that most, if not all, utilities facing a more competitive environment are unlikely to behave this way, especially since the FEIS suggests that actions to maintain heat rates at coal-fired units have negligible costs.

To estimate the significance of the FERC's current assumption, we considered the difference that would occur if the FERC had assumed that 50 to 100 percent of all coal-fired units would have maintained their existing heat rates under the base case without the open access rule. As part of this analysis, EPA considered how future life extension activities covered in the FERC analysis can temporarily improve heat rates in some cases. EPA also examined the influence that this assumption change could have on the High-Price-Differential Base Case itself. EPA wanted to determine whether the maintenance of heat rates by coal-fired units led to greater usage levels of coal-fired units in this baseline.

Based on an examination of the FERC's modeling assumptions and actual model runs in which coal-fired units have their facility lives extended, EPA reduced estimated $NO_x$ increases resulting from changes in heat rate assumptions by 5 percent. EPA also found that the relative improvement in the variable costs of operation through heat rate maintenance was unlikely to have much influence on the relative shares of generation provided by coal- and gas-fired units in the baseline. This conclusion is based on the very large variable cost advantage coal-fired units already enjoy over most oil/gas-fired units in competing to fill the same types of load demands in various parts of the country. From this assessment, EPA prepared estimates that are provided in Table 3 of the potential increases in annual $NO_x$ emissions (compared to the High-Price-Differential Base Case) resulting from changing the heat rate assumptions.

**Table 3**
**Potential Increases in $NO_x$ Emissions Due to Changes in Heat Rate Assumptions**
**(1000 tons)**

| Year | Low | High |
|---|---|---|
| 2000 | 30 | 60 |
| 2005 | 65 | 129 |
| 2010 | 102 | 204 |

## ADDITIONAL UNCERTAINTIES IN MODELING COMPETITION

The FEIS considers the difference that the open access rule makes in increasing the level of competition in wholesale power markets over time. In both the base case with competition and the cases where the open access rule is implemented, the main beneficiaries of the competitive environment are coal-fired units, largely displacing combined-cycle gas units that currently exist or could have been built to meet future increases in demand. The improved competitiveness of coal-fired units is considered through assumptions related to their ability to operate at higher utilization rates and to respond to lower transmission charges over time. These assumptions are critical to growth in the use of coal-fired electric generation capacity over time, but are highly uncertain.

The FERC made reasonable judgments in this area given the lack of information that exists regarding actual transmission charges and other key elements in transmission contracts, and how much further coal-fired units can go in improving their capacity availability on a regular basis. In fact, the transmission charges that the FERC assumed existed in the base cases were developed by estimating how large they would have been in 1993 on various major electric transmission lines in order to produce generation levels like those actually reported. The FERC did not consider whether other factors could have influenced generation levels and interregional power transfers, or whether 1993 was a sound "representative" year to use in such an effort. Over the last 10 years, 1993 is unique in having had the largest differential between coal and gas prices delivered to utilities[9]. EPA believes that other plausible assumptions could have been made about transmission charges and capacity availability over time that could have led to different results.

The assumptions that the FERC made led to a baseline situation where coal-fired unit utilization moves from 62 percent in 1993 (the year that the FERC used to establish their transmission charges) to 70 percent in 2000 and 76 percent in 2005. This occurs as they assume a steady decline from 1993 of the transmission charges and a steady increase of the capacity availability of coal-fired units until 2005 (where the capacity availability limit is assumed to be 85 percent of the hours in a year). Under the open access rule, the FEIS assumed a very rapid drop in transmission charges and a large increase in capacity availability by 2005 (90 percent capacity availability). The FERC's assumptions led to the conclusion that the open access rule would increase coal-fired unit utilization to 72 percent and 78 percent in 2000 and 2005, respectively. There is thus a difference of 2 percent in the utilization of coal-fired capacity between the two cases. This 2 percent difference led to an increase of over 90,000 tons of $NO_x$ emissions in 2000 – a 45,000 ton increase per one percent increase in coal use. This amount varies to some extent between model runs.

It is quite conceivable that without the open access rule, there would be less than an 8 percent increase in coal-fired capacity utilization by 2000. In 1994, coal-fired unit utilization at utilities remained at 62 percent and EPA estimates that it was 62.5 percent in 1995.[10,11] Only modest gains in coal-fired capacity utilization have occurred in the last two years without the open access rule.

It is also possible that coal-fired units could be used to a greater degree due to the rule's speeding up utilities' actions to improve the capacity availability of coal-fired units. The assumptions the FERC made about 85 percent capacity availability in 2005 were a binding constraint for a very large percentage of the coal-fired units. Close to 40 percent of U.S. coal-fired capacity has been operating at levels higher than 85 percent over the last 5 years.[12] If the difference in the utilization of coal-fired generation units in the High-Price-Differental Base Case and cases with the rule in effect was another 2 percent greater than reported in the FEIS, that alone could potentially lead to a doubling of the increase of $NO_x$ emissions to 182,000 tons in the year 2000.

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[9] See FEIS, Appendix G, Figure G-2.

[10] Energy Information Administration, Electric Power Annual 1994, 1995.

[11] EPA prepared estimate from information available in EIA's Annual Energy Outlook 1996 and Electric Power Monthly January 1996.

[12] North American Electric Reliability Council, Generating Availability Data System, electronic data base, 1996.

Coal plant utilization is a model output, not an input assumption. These issues are not raised in order to defend any position or estimate of future coal plant utilization *per se*; rather, the point is that this model result stems from the collective impact of all the assumed inputs, and signals the overall flexibility of the utility system in response to the scenarios analyzed. EPA is concerned that overall, insufficient flexibility has been built into the FEIS analysis, and emphasizes the importance of the remaining uncertainties regarding the future of the utility sector as it responds to wholesale and other competitive pressures.

## CONCLUSIONS

In conducting this review of the FEIS, EPA examined the most critical assumptions in the FERC analysis. EPA believes that the EIS process and the products produced by FERC staff have contributed to a broader discussion and understanding of the environmental impacts of open access.

EPA's review suggests that relatively modest changes in some key assumptions can lead to estimated $NO_x$ emissions that are notably larger than found in the FEIS rule scenarios. Table 4 below summarizes the results of EPA's assessment. The results show that in 2005 reasonable changes in four key variables can result in $NO_x$ increases comparable in scale to the increases that FERC attributed to the open access rule in the Competition Favors Coal scenario (which EPA believes is the best point of departure for considering how large the impacts of the open access rule are likely to be). Because of the complex interactions between assumptions and the likelihood of overlap between some of these actors, it should be noted that Table 4's results are not additive

**Table 4.**
**Summary of Key Assumptions and**
**Potential Increases in $NO_x$ Emissions**
**(1000 Tons)**
**(These Results are not Additive)**

| | 2000 | 2005 | 2010 |
|---|---|---|---|
| Transmission Expansion | 44-75 | 58-75 | (41)-(61) |
| Planning Reserve Margins | 20-45 | 50-65 | 70-110 |
| Price Response | 9-31 | 13-46 | 16-57 |
| Heat Rates | 30-60 | 65-129 | 102-204 |

Without running the CEUM model, it is not possible to determine with precision how these assumptions would play out dynamically, either in isolation or in combination. The FEIS projects that significant adverse impacts (if they develop) could not appear in the immediate future, but could take place over a longer time frame. EPA believes that such adverse impacts could develop more rapidly than the FEIS indicates, and could be of greater magnitude. However, these impacts could be averted by appropriate mitigation actions by EPA, the States and the FERC, acting under their respective authorities.

The FEIS, and EPA's supplemental work, is designed to indicate reasonably possible outcomes of open access policies. The concerns identified here do not contradict the main tenets of the FEIS, but indicate that our understanding of potential impacts is still limited and subject to uncertainty.

## INCREASE IN CAFE STANDARDS

Question: If the open access rule is adopted without a mitigation strategy for carbon dioxide, will increases in CAFE standards be required in order for the United States to fulfill its commitment to reduce emissions?

Answer: The upper limit projected in the FERC analysis for the EIS *for* $CO_2$ increases from open access is 5-7 MMTC/year by 2000. EPA's Technical Analysis concluded that under a different set of assumptions, the increase in $CO_2$ emissions due to restructuring over the short term could amount to 10-20 MMTC.

A change in CAFE standards would take years to have full effect, because of the rate of turnover in the vehicle fleet. Current estimates for CAFE effectiveness can be referenced in an Office of Technology Assessment (OTA) study from July 1994, "Saving Energy in U.S. Transportation." For a change in CAFE standards amounting to a 20-percent increase over 2 years and a 40-percent increase over 7 years, estimates of fuel savings after 7 years are approximately 20 million metric tons of carbon equivalent per year (MMTC); after 11 years, estimates range from 20-60 MMTC/year.

These emissions reductions *would be* large enough to offset the potential increases cited by most participants in the FERC debate, but they would ***be fully realized after*** the year 2000.

## MITIGATION STRATEGIES THAT COULD BE ADOPTED BY THE COMMISSION

Question: In adopting the open access rule, the Commission declined to adopt a mitigation strategy. Are there mitigation strategies that could be adopted by the Commission that would be effective concurrently with the rule to assure no increase of oxides of nitrogen, fine particles, ozone, toxics and carbon dioxide? Please identify strategies or, if you believe this is beyond the expertise of the Agency, please obtain the information from the Commission.

Answer: EPA has discussed possible FERC actions to mitigate potential increases in emissions attributable to open access in our comments on the Draft EIS (pages 44-61) and in our May 13, 1996 letter to CEQ (p. 4). These documents are enclosed. We note that on May 29, 1996, FERC agreed to play a back-stop role, if necessary, by initiating an inquiry and a possible rulemaking with regard to mitigation strategies.

## LETTER FROM CAROL M. BROWNER

MAY 13 1996

Kathleen A. McGinty
Chair of the Council on
Environmental Quality
Old Executive Office Building
Room 360
17th and Pennsylvania Avenue
Washington, DC 20500

Dear Ms. McGinty:

Pursuant to Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) has reviewed Order No. 888 providing for open transmission access, proposed by the Federal Energy Regulatory Commission (FERC) on March 29, 1995, and adopted on April 24, 1996. EPA believes the open access rule will play a key role in making electricity markets more competitive, encouraging greater efficiency in electric power production, and reducing electricity costs for American consumers.

EPA has determined that the open access rule is unlikely to have any significant adverse environmental impact in the immediate future, and that in light of its anticipated economic benefits, implementation of the rule should go forward without delay. EPA has also determined, however, that under certain circumstances discussed below, the open access rule could lead to increases in air pollution in the future that would have impacts which are unsatisfactory from the standpoint of public health or welfare or environmental quality.[1] Consequently, as required by Section 309(b) of the Clean Air Act, EPA hereby refers the open access rule to the Council on Environmental Quality (CEQ). In EPA's view, these potential future impacts can be addressed through a combination of actions by EPA and States under the Clean Air Act and, if those actions are unsuccessful, further actions by FERC under its authorities. The reasons for the referral and suggested steps to address potential pollution increases are discussed below.[2]

Substantial concerns have been raised that the open access rule could in some circumstances cause significant increases in air pollution, both nationally and in particular regions. FERC's Final Environmental Impact Statement (FEIS) represents a substantial effort to examine these concerns. The FEIS correctly indicates that the air pollution impacts of open access will depend on the interaction of fuel prices, technological developments, and decisions taken by businesses and regulatory bodies. In some scenarios presented in the FEIS, the rule could lead to emission levels below those otherwise expected. In that case, the American people will receive both the economic benefits of competition and cleaner air, and there would be no need for further FERC action.

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[1] EPA is conducting a review of the modeling conducted by FERC in the FEIS. EPA expects to complete and release this review shortly. The review will be available to FERC for consideration in shaping its response to this referral.

[2] EPA raised these concerns in comments on FERC's proposed open access rule on August 7, 1995, and in comments on the draft environmental impact statement on February 21, 1996.

In other scenarios, however, the FEIS acknowledges that the rule could cause emissions to be higher than otherwise expected in future years, and this referral is addressed to those circumstances. In EPA's judgment, the FEIS provides a reasonable basis for concluding that there are not likely to be any significant immediate adverse impacts from the rule. On the other hand, EPA believes that safeguards are needed for the longer term to make sure that open access achieves the economic benefits of competition without increases in pollution.

Potential future increases in emissions of oxides of nitrogen (NOx) due to open access are a matter of serious national importance because they would exacerbate a significant existing national pollution problem that needs to be comprehensively addressed. NOx emissions must be substantially reduced in broad areas of the country in order to meet the national public health protection standard for ozone in downwind States where that standard is currently violated. Current NOx emissions in the eastern half of the United States from electric power plants are approximately three million tons during the summer ozone season. EPA believes that based on the best available scientific information, it will be necessary to reduce these NOx emissions to below one million tons during the ozone season, in order to prevent violations of the ozone health standard in downwind areas in the Northeast and Upper Midwest. Any NOx increases resulting from open access in future years would exacerbate the difficulty of accomplishing the needed reductions.

Potential NOx increases associated with open access will be avoided if the States, working with EPA, successfully carry out their obligations under the Clean Air Act to address long-distance transport of NOx emissions and prevent sources within their borders from contributing to violations of the ozone health standard in downwind States. EPA is currently working with the 37 eastern-most States through the Ozone Transport Assessment Group (OTAG) to bring the best available science to bear on understanding the scope of the long-distance transport problem, and to reach a consensus among the States on measures needed to reduce emissions to meet the public health standard for ozone. Among the measures under active study is a region-wide "cap-and-trade" program for NOx emissions, with reductions from utility sources in the range of 55 to 85% below 1990 levels. The cap would assure the necessary overall pollution reduction, while emission trading would enable sources to reduce the costs of making these reductions, as has been done successfully with $SO_2$ emissions in the acid rain program created by Title IV of the 1990 Clean Air Act Amendments. EPA believes that a region-wide cap-and-trade program of this kind is the best method for achieving the needed reductions.

EPA will use its authority under Title I of the Act to support successful completion of the OTAG process. Those OTAG States which currently do not meet the ozone standard are already under a legal obligation to adopt necessary additional pollution controls and to amend their "State Implementation Plans" (SIPs) by mid-1997. As a further step, EPA will notify the upwind OTAG States that they also need to amend their SIPs and to adopt control measures necessary to prevent contribution to ozone violations in downwind States. While EPA has every expectation that all of the OTAG States will succeed in reaching agreement this year on the needed control strategy, EPA is prepared to establish a NOx cap-and-trade program for the OTAG region through "Federal Implementation Plans" (FIPs) if some States are unable or unwilling to act in a timely manner.

EPA will also initiate a discussion with States and other stakeholders this summer on the desirability and feasibility of implementing an interim cap-and-trade program in order to assure achievement of the full benefits of Federal and State NOx emission measures that are already in place or will become effective over the next several years. These NOx measures generally limit emission rates, not the total tonnage of emissions, and they do not take full advantage of emissions trading. EPA will explore means of converting these limits into an interim cap-and-trade program.

EPA believes the OTAG and Clean Air Act processes, if successful, should mitigate any shifts in NOx emissions that may occur as electric generators and their customers move forward under the open access rule and related measures to increase competition and promote more efficient markets in electricity.

EPA must be concerned, however, about the potential occurrence of future NOx emissions increases in the absence of timely establishment of a NOx cap-and-trade program under the Clean Air Act. Under those circumstances the open access rule would contribute to ozone standard violations in downwind areas. EPA has determined under Section 309 of the Clean Air Act that the open access rule would, under these circumstances, have environmentally unsatisfactory impacts.

If the OTAG and Clean Air Act processes fail to produce the necessary pollution limitations in a timely manner, EPA will call upon all other interested Federal agencies to assist in solving the problem. In this context, FERC could contribute to this effort. As an initial matter, FERC could agree to open an inquiry to further examine issues of mitigation strategies for NOx increases attributable to the open access rule in the event that the OTAG process does not succeed. FERC could also agree to initiate a rulemaking to propose suitable means under the Federal Power Act of mitigating those increases if it became necessary for EPA to propose FIPs under the Clean Air Act. Commitment to take these steps would be an effective signal that the Administration and FERC share the same resolve to achieve both the economic benefits of competition and the health benefits of clean air.

EPA believes that if FERC made commitments to take these actions if needed, the combination of actions by EPA and States under the Clean Air Act and back-up actions by FERC under its authorities would effectively safeguard against potential adverse environmental impacts due to NOx increases in both the long term as well as the immediate future.

In order to monitor developments under the rule, EPA intends to draw on available information and expertise from the Department of Energy (DOE) and FERC to establish a tracking system combining available information on emissions, capacity utilization, wholesale electricity sales, and other factors. EPA, DOE, and FERC should consult to develop appropriate means to identify effects on emissions attributable to the open access rule.

The potential for future increases in emissions of carbon dioxide ($CO_2$) and other pollutants in some open access scenarios is also a matter of concern. Increases in $CO_2$ would exacerbate the difficulty of carrying out the Administration's commitment to reducing emissions of greenhouse gases under the President's Climate Change Action Plan and the Framework Convention on Climate Change. The Administration is committed to develop appropriate post-2000 targets, timetables and policies under the Framework Convention on Climate Change. EPA is also ready to work with DOE and utilities to enhance existing voluntary commitments on $CO_2$ as a safeguard against emissions increases associated with open access.[3]

The steps EPA is taking under the Clean Air Act, combined with those that could be taken by FERC in response to this referral as suggested above, would permit us to achieve both the economic benefits of competition in the electric sector, and timely attainment of healthy air for all Americans. In short, in this way the Administration can assure the American people the benefits of both competition and clean air.

Sincerely,

Carol M. Browner

Carol M. Browner

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[3] $CO_2$ could also be covered by the tracking system suggested above. Measurements or estimates of mercury emissions could also be integrated into such a tracking system.

February 20, 1996
(Corrected copy
February 21, 1996)

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

| | |
|---|---|
| **Promoting Wholesale Competition )<br>Through Open Access )<br>Non-discriminatory Transmission )<br>Services by Public Utilities )** | **Docket No. RM95-8-000** |
| **Recovery of Stranded Costs by )<br>Public Utilities and Transmitting )<br>Utilities )** | **Docket No. RM94-7-001** |

## COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT

The United States Environmental Protection Agency (EPA) hereby submits comments on the Federal Energy Regulatory Commission's (FERC) Draft Environmental Impact Statement (DEIS). The DEIS was issued in the above-referenced dockets, in connection with the March 29, 1995 Notice of Proposed Rulemaking (NOPR) addressing the FERC's proposed open access transmission rule.

## I. INTRODUCTION

EPA appreciates the opportunity to provide these comments on the DEIS with regard to this important rulemaking. As we have stated in earlier filings, EPA supports the timely implementation of open access. At the same time, EPA can not ignore that open access is likely to have significant environmental impacts, particularly in the short term.[1] Environmental laws and regulations which were developed assuming a traditional electricity structure are not likely to be able to respond quickly enough to prevent environmental harm from open access.

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[1] Because there are a many underutilized generating facilities with high emission rates and few emission controls, EPA believes that the most likely short-run scenario includes greater usage of those plants to export power outside their traditional service areas, and greatly increased emissions.

These comments on the DEIS are intended to facilitate a more comprehensive identification of reasonably foreseeable, significant environmental impacts and identify feasible mitigation strategies for those impacts, consistent with the timely implementation of the proposed rule. EPA believes that the open access rule can and should be adopted, if the FERC's makes appropriate modifications in preparing the final EIS and makes an appropriate commitment to mitigation of potential environmental harm as part of the final rule. EPA looks forward to working with the FERC as implementation of the open access rule moves forward.

A decision by the FERC to adopt and implement the open access rule and related actions to increase competition without contemporaneously addressing the need to prevent increases in pollution will significantly undermine the efforts of the states and EPA to develop a consensus with the electricity generators on a program to reduce emissions that are damaging public health and the environment. Waiting until after the forces of competition are fully unleashed to attempt to bring the industry into a regulatory regime merely makes the process more difficult and expensive. Furthermore, an *ex post facto* emissions reduction program would fail to meet the most basic principle of environmental efficiency: that externalities should be built into the cost of goods and services, including the price of electricity.

Because of the potential for the proposed rule to significantly increase air pollution, the need for additional information to better assess the potential impacts, the need for further analysis and consideration of mitigation options, and the absence of an appropriate mitigation mechanism to prevent the pollution increases, the EPA has assigned the proposed rule and the DEIS a rating of EU-2 (Environmentally Unsatisfactory - Insufficient Information). EPA looks forward to working with the FERC in order to resolve these concerns. If we are able to resolve these concerns, it will not be necessary to consider referring this action to the Council on Environmental Quality under section 309 of the Clean Air Act in accordance with 40 CFR Part 1504.

### A. Environmental Significance of Electricity Generation

Electric power plant emissions are substantial contributors to the nation's most significant public health and environmental concerns associated with air pollution, including: 1) adverse effects on human health from ground level ozone, particulate matter, mercury, and other toxic air contaminants; 2) ecosystem impacts such as eutrophication, impaired visibility, regional haze, and acidification of surface waters from acid deposition; and 3) climate change due to greenhouse gases. In 1993, power plants were responsible for 72% of all sulfur dioxide ($SO_2$) emissions, 33% of all nitrogen oxides ($NO_x$) emissions, 32% of all emissions of particulate matter (PM), 23% of mercury emissions, and 36% of all anthropogenic carbon dioxide ($CO_2$) emissions[2] In addition, power plants cause a range of multi-media environmental impacts due to their water consumption.

EPA's approach to the FERC's DEIS and open access rule follows a central tenet of the Clinton Administration that a strong economy and a strong environment go hand in hand. We can pursue the economic well-being of our nation's citizens and protect their health and their environment at the same time. Increasing competition in the electric sector promises to bring economic benefits due to greater efficiency and lower costs. Yet EPA is concerned that, as presently structured, the open access rule -- particularly when viewed together with other actions contemplated by the FERC and by states to promote competition -- is likely to cause substantial increases in air pollution that will seriously endanger public health and the environment. Such a rule would be both unfair and economically inefficient. On the other hand, EPA believes that practical options are available to the FERC, EPA, DOE, and state agencies to mitigate the impacts of the proposal in a manner that would assure that the benefits of competition are secured without pollution increases. These options should be carefully considered in the EIS.

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[2] U. S. Environmental Protection Agency, National Air Pollutant Emission Trends 1900-1993, Washington, DC, 1994.

EPA has regulatory authority to address some, though not all, of the impacts identified here. EPA stands ready to use that authority as needed. But regulations under the Clean Air Act must in general be implemented through State Implementation Plans; the time from reaching a general conclusion that control is needed to adoption of necessary regulations by states generally takes from three to five years ; that regulatory lag time means compliance with new rules can be, and usually is, more than a decade from the point at which the problem occurred. Ten years of bad air is ten years delay too many.

As set forth in these comments, EPA maintains that the DEIS in its present form does not fulfill critical requirements of the National Environmental Policy Act (NEPA). The DEIS's assessment of impacts associated with the proposed rule is flawed by unreasonable assumptions and omissions. Among other things, the DEIS does not identify the appropriate "no action" alternative and thus unreasonably understates the extent of the impacts of the proposed rule; does not make reasonable assumptions about transmission capability; fails to make necessary comparisons of base cases and rule scenarios; and does not properly or fully address water and fisheries impacts and mitigation. EPA's comments recommend changes which, if incorporated into the final EIS, would remedy these problems.

## B. Pollutants of Primary Concern

EPA is concerned that the proposed rule, as presently structured, (as well as the FERC's existing open access policies) would likely lead to significant increases in three pollutants that are of primary concern to EPA: $NO_x$, mercury, and $CO_2$.[3] A brief summary of the major health and environmental effects associated with these pollutants follows.

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[3] Increases in sulfur dioxide are not a major concern with respect to the proposed rule because this pollutant is subject to a nationwide emissions cap administered by EPA's Acid Rain Program under Title IV of the Clean Air Act. Particulate emissions, while also a major concern, would be addressed by the combination of the existing cap on sulfur dioxide and EPA's proposed mitigation strategy for $NO_x$.

**Nitrogen Oxides.** $NO_X$ contributes to ground level ozone, or smog, a widespread air pollution concern in temperate climates. Ozone is formed by the reaction of $NO_X$ and volatile organic compounds (VOCs) in the presence of sunlight. Ozone causes increased asthma attacks, reduced pulmonary function, coughing and chest discomfort, headache, and upper respiratory illness. Acute exposure to ozone at relatively low concentrations has been found to reduce lung function significantly in healthy persons (especially active children and outdoor workers at moderate and heavy levels of exertion). This decrease in lung function may be accompanied by symptoms such as chest pain and coughing, as well as making lungs more sensitive to allergies. Animal studies have demonstrated that repeated exposure to ozone can produce permanent structural damage in lungs and accelerate lung aging as well as the rate of lung function loss.

In order to meet current health-based National Ambient Air Quality Standards (NAAQS) for ozone, significant reductions in $NO_X$ emissions will be required from both mobile and stationary sources, including power plants. While air quality has improved significantly in recent years, it is estimated that over 100 million people live today in areas where air quality still violates the health-based NAAQS for ozone.

Through atmospheric transformation, $NO_x$ emissions also contribute to formation of breathable particulate matter. The health-based NAAQS for particulate matter set by EPA currently covers particles smaller than 10 microns in diameter (PM10), which includes nitrate particles. A growing body of evidence suggests serious health effects may occur at particulate levels below the current standard. These effects include mortality and a range of respiratory related morbidity effects. EPA considers reducing particulate matter exposure to be one of its highest priorities in protecting public health.

In addition to human health impacts, $NO_X$ emissions cause serious harm to the environment. Ozone formed from $NO_X$ emissions adversely affects the growth of certain agricultural crops and forest species. Air deposition of nitrogen oxides into coastal estuaries (most notably the

Chesapeake Bay) contributes to eutrophication. $NO_x$ emissions are also a significant component of acid rain. Acid rain impacts include damage to property and ecosystems, such as the lakes and streams in the Adirondacks, Mid-Atlantic states, and the Upper Midwest region. Visibility impairment due to regional haze results in part from particulates, including nitrates formed from $NO_x$ emissions. These impacts are of notable concern in the Grand Canyon and western urban areas.

**Mercury.** Mercury poses significant health and ecosystem threats. Health impacts are well documented. The signs and symptoms of disease are predominantly those of the nervous system: difficulty with peripheral vision or blindness, sensory disturbances, incoordination, impairment of walking, slurred speech and, in some cases, death. Children can be affected as well as adults, and neonatal impacts from ingestion of methyl mercury by pregnant women have also been documented.

Mercury is of great concern because it persists in the environment and bioaccumulates (i.e., concentrates in predatory animals and passes up the food chain). Reproductive effects in wildlife are of concern. These sublethal effects occur in wildlife at concentrations far lower than those that cause overt toxicity. In restricted wildlife populations, effects of mercury originating from point sources have been conclusively demonstrated. Mercury originating from airborne deposition is linked to reduced populations of fish, bald eagles, river otters, and mink.

**Carbon Dioxide.** Carbon dioxide is the principal pollutant contributing to global climate change due to human enhancement of the greenhouse effect. In 1992, the United States joined with 161 countries in signing the Framework Convention on Climate Change to address the danger of global climate change. The latest report by the Intergovernmental Panel on Climate Change states that "the balance of evidence suggests a discernible human influence on climate" and that average global temperatures could rise 1 to 3.5 degrees Celsius by 2100 if anthropogenic emissions of greenhouse gases are not reduced. Changes in global temperatures threaten to change the global climate system, raise sea levels and inundate coastal areas, inflict damage to ecosystems, and cause losses in agricultural production and increases in vector-borne diseases[4].

In 1993, President Clinton announced our country's commitment to returning emissions of greenhouse gases to their 1990 levels by the year 2000. To achieve this goal, the Administration developed the Climate Change Action Plan[5], a coordinated, interagency federal response consisting of almost 50 actions to reduce U.S. greenhouse gas emissions.

Because the electricity sector is responsible for more than one-third of all U.S. anthropogenic emissions of $CO_2$, a dominant greenhouse gas, substantial reductions in power plant emissions of $CO_2$ will be required in order to meet national policy goals. Many major electric utilities have already begun reducing their emissions as part of the Climate Challenge program sponsored by the Department of Energy. Through this program, utilities voluntarily agree to take actions that will reduce or offset their $CO_2$ emissions.

## II. ANALYSIS OF ENVIRONMENTAL IMPACTS

### A. Environmental Impacts Identified by the DEIS

The DEIS reports projected increases of up to 92,600 tons of $NO_X$ emissions annually by 2010 that the DEIS attributes to the proposed open access transmission rule. These increased emissions will adversely impact air quality in places where the air is already unhealthy. Substantial increases of particulate matter are also projected in the DEIS to result in some areas. This is especially true in the Western U.S., where by 2010 these emissions are projected to increase by 5 to 13%. With respect to $CO_2$, the DEIS forecasts significantly higher emission levels than those published in connection with official climate policy. Mercury emissions appear to be misstated, but any increase in a highly toxic air contaminents should be avoided if possible.

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[4] IPCC Synthesis Report: An Assessment of Scientific-Technical Information Relating to Interpreting Article II of the Framework Convention on Climate Change. Geneva, 1995 (forthcoming in English in February 1996).

[5] *The Climate Change Action Plan*, Washington DC, October 1993.

The environmental impacts associated with the proposed FERC action are likely to be significantly adverse for some areas of the nation. In addition, the proposed FERC action, if undertaken without mitigation, would be in conflict with the nation's long-established environmental policy. This is true even for the impacts as reported in the DEIS. Yet EPA believes these impacts to be understated, perhaps greatly understated.

The DEIS identifies significant emission increases from the proposed open access rule as well as significant increases in the baseline. Later sections of these comments address the issue of baseline definition and identify other technical omissions which EPA believes have resulted in substantial underestimation of potential environmental impacts. This section evaluates only those potential environmental consequences that are identified in the DEIS.

**Nitrogen Oxides.** A primary focus of concern for EPA and numerous interested parties in this proceeding has been the potential for electric generators to emit increased levels of $NO_x$, an ozone precursor, as a result of open access transmission. $NO_x$ emissions from power plants are a leading contributor to the regional ground-level ozone problem, and the regional transport of $NO_x$ has become an issue of national importance. The Ozone Transport Commission (OTC) has developed an interstate agreement to establish a $NO_x$ budget and trading system in the 13-

jurisdiction Ozone Transport Region (OTR) in the Northeast. Moreover, a larger group of 37 states has formed the Ozone Transport Assessment Group (OTAG) to develop regional ozone trajectory analyses and air quality modeling strategies for the entire eastern U.S.[3]

Transport of $NO_x$ emissions from upwind areas into ozone nonattainment areas in the Northeast and Great Lakes regions has been demonstrated through the use of ambient air quality monitors[4]. During one prolonged ozone episode in June of 1995, for example, air quality monitors in Pennsylvania were recording ozone concentrations of 100 parts per billion (ppb) at the OTR border (as compared to the 120 ppb air quality standard). As the OTC agreement is implemented, state emissions budgets for $NO_x$ emissions will be reduced substantially; current transboundary $NO_x$ impacts will become relatively more important, and possible increases in upwind $NO_x$ emissions will have greater impact.

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[3] Largely due to unresolved issues regarding long-distance transport of $NO_x$ in formation of ozone, many eastern and midwestern states with ozone nonattainment areas did not submit State Implementation Plan (SIP) revisions by November 1994 (the deadline set by the Clean Air Act) to demonstrate attainment of the ozone standard. In cooperation with EPA, the 37 eastern states have come together with the goal of developing coordinated SIP revisions that address these problems.

If this effort does not come to timely fruition, two provisions of the Clean Air Act allow EPA to take action against upwind sources of air pollutants that adversely affect downwind areas. First, section 110(a)(2)(D) requires each SIP to contain provisions prohibiting sources from emitting pollutants that "contribute significantly" to nonattainment in another State. If EPA makes a finding of significant contribution under section 110(k)(5), the State must submit SIP revisions to correct the inadequacy. EPA may give the State up to 18 months from the date of the finding to make the SIP submission.

If the State fails to submit the SIP revisions, or they are incomplete, an 18-month deadline begins to run after which the State would suffer certain sanctions under section 179(a) if it has not made the submission. EPA must approve or disapprove a complete submission within 12 months of receipt. If EPA disapproves the revision, another 18-month deadline begins to run for the State to remedy its initial submission or suffer certain sanctions. If the State has not remedied the inadequacy by two years after a sanctions deadline begins to run, EPA must promulgate a Federal Implementation Plan containing federal measures to eliminate the SIP inadequacy.

The second provision is section 126(b), which authorizes a State or locality to petition EPA for a finding that a major source or group of stationary sources emits air pollutants in an amount that violates the section 110(a)(2)(D) prohibition against "contribut[ing] significantly" to nonattainment downwind. Within 60 days, EPA is required to make or deny the requested finding. If EPA makes the requested finding, the affected sources are precluded from operating, unless they comply with any conditions (such as the imposition of pollution controls) that EPA may require, under section 126(c). The State of Maine submitted EPA a section 126 petition on August 1, 1995, but waived the 60-day response period. EPA responded that the agency does not plan to respond until additional information is received from the Ozone Transport Assessment Group process.

[4] The National Research Council found that "there is a persistent blanket of high ozone in the Eastern United States several times each summer . . . Since rural ozone values [i.e. regional background levels] commonly exceed 90 ppb on these occasions, an urban area need cause an ozone increment of only 30 ppb over the regional background to cause a violation . . ." National Research Council, Rethinking the Ozone Problem in Urban and Regional Air Pollution, Washington, DC, 1991.

. The $NO_x$ emissions reported in the DEIS are annual and cannot be compared directly to the OTC efforts, which account for $NO_x$ over a 5-month ozone season. OTC plans assume a 1990 baseline of 490,000 tons of $NO_x$, declining to approximately 240,000 tons by 1999 and then to approximately 125,000 tons after 2003. These OTC estimates account for all large stationary sources, not just electric utilities. Table 1 shows a recent estimate of state-by-state, 5-month ozone season $NO_x$ budgets, or target emission levels.

**Table 1. Five-Month $NO_x$ Emissions for the OTR (tons)**

| STATE | Baseline | Phase II (1999-2003) | Phase III (2003-) |
|---|---|---|---|
| Connecticut | 11,547 | 5,910 | 4,522 |
| Delaware | 13,346 | 5,792 | 3,830 |
| District of Columbia | 619 | 494 | 383 |
| Maine | 4,548 | 3,237 | 2,459 |
| Maryland | 58,567 | 22,881 | 15,523 |
| Massachusetts | 41,932 | 17,218 | 12,861 |
| New Hampshire | 14,706 | 5,207 | 3,727 |
| New Jersey | 45,625 | 15,430 | 12,236 |
| New York | 87,072 | 46,700 | 32,349 |
| Pennsylvania | 205,218 | 93,204 | 52,857 |
| Rhode Island | 1,185 | 446 | 312 |
| Vermont | 73 | 56 | 30 |
| Virginia | 6,303 | 2,480 | 1,785 |
| **OTR TOTAL BUDGET** | **490,741** | **219,055** | **142,874** |

EPA starts with the impacts reported in the DEIS Competition-Favors-Coal rule scenario as a proxy to evaluate the significance of $NO_x$ emission increases which may result from the open access rule. EPA believes that any benefits from accelerated turnover of less efficient coal generators to more efficient and clean technologies will extend well beyond the deadline for attainment of federal health-based standards in most nonattainment areas.

Converting annual projections to estimates for the 5-month ozone season, the Competition-Favors-Coal rule scenario projects up to 30,000 tons of additional $NO_X$ emissions during the ozone season in the 26 states east of the Mississippi River, a smaller region than the 37-state OTAG region. Such potential emissions increases in the context of the OTC agreement are significant. For example, the East North Central region alone in the year 2000 is estimated to emit an additional 14,000 ozone-season tons (or 33,500 tons for the entire year) in the Competition-Favors-Coal rule scenario. This is about one-third of the total $NO_X$ emissions budget for New York state (from all large stationary sources) in that year or about 65 to 90% of Maryland, Massachusetts, and New Jersey's total budgets respectively. It should be noted that these increases are in addition to the substantial increases projected in the baselines of the DEIS.

The proposed rule, if implemented without mitigation, has the clear potential to allow significant emissions upwind of ozone nonattainment areas and therefore result in increased emissions in one region of the country partially negating the progress being made, at great effort and considerable expense, in the Northeast. These upwind emissions represent substantial fractions of the total emissions budgets of OTR states. In total, the 5-month emissions forecast for the Eastern U.S. in the Competition-Favors-Coal rule scenario represents an increase of greater than 10% of the entire OTR $NO_x$ budget under Phase II, or about 20% of the Phase III OTR budget. The Northeast is at risk of substantial new compliance costs if such increases keep areas in the region out of ozone attainment. The DEIS does not report socioeconomic costs and benefits by region, so the potential economic gains or losses from such an outcome (like the overall benefits reported in the DEIS) cannot be put into a regional context.

Reported $NO_x$ emissions in the Western U.S. in the Competition-Favors-Coal scenario increase by 20,000 to 38,000 tons for the Mountain and Pacific regions taken together, or 3.4 to 4.1% over the modeled period. These increases are presumably not immediately upwind of ozone nonattainment areas but raise concern with regard to visibility and regional haze.

The $NO_X$ emissions increases included in the DEIS baselines are significant and well above acceptable levels for attainment of ozone standards in downwind areas. The baselines assume a case-by-case implementation of the open access policy and, as discussed below in section III(A), base case emissions increases must be considered in the analysis of the impact of the open access rule. The two DEIS base cases report increased $NO_X$ emissions of 410,000 and 751,000 tons per year, respectively, over the 2000-2010 period. These increases are in addition to those modeled in the rule scenarios. It is of critical importance for the FERC to determine what portion of this increase is due to open access policy. In total, adding this baseline increase to the reported $NO_X$ increase in the Competition-Favors-Coal rule scenario suggests that up to 843,600 additional tons of $NO_X$ may be emitted across the nation each year by 2010.

With regard to air quality modeling, EPA notes that the emissions inventory for the UAM-V model analyzes a situation in which $NO_X$ emissions actually decrease under the open access rule for the two-week period analyzed. This decrease is the result of an entirely different utility model, the Integrated Planning Model (IPM). According to the DEIS, "plant emissions data in the UAM-V analysis come from annual generation data from CEUM runs, which are then converted into estimates of peak two-week generation data using the IPM model, and then converted into comparable emissions data." DEIS at 4-19. This undocumented use of new models and data conversions turns the case, described as that which "should result in the greatest air quality impacts" (DEIS at 5-21), into one where there is a net emissions decrease, as shown in the DEIS Appendix Table E-3 (DEIS at E-9).

As a result, no air quality modeling information is provided in the DEIS to indicate the possible impacts of increased peak period $NO_x$ emissions. Emissions impacts reported in the DEIS must instead be evaluated by comparing reported potential emissions increases over the ozone season to other estimates, keeping in mind the severe state of ozone nonattainment in many areas at present.[3]

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[3] Despite this shortcoming in the DEIS, EPA does not recommend revising the air quality modeling analysis at this time.

**Particulate matter.** Incremental emissions of directly emitted particulates in the Eastern U.S. are small in the DEIS rule scenarios. More detailed information would be needed to evaluate the significance of increases in the South Atlantic and East North Central regions (4,000 and 4,200 tons respectively in the year 2000) because of the localized impacts of PM on human health.

Particulate emissions changes in the Western U.S. are larger and more widespread. The Competition-Favors-Coal rule scenario in the Pacific and Mountain regions taken together shows an increase in TSP emissions of 3.5 to 6.5 percent, or 3,700 to 7,400 tons per year in 2000 and 2010, respectively. This region of the country has also been undertaking collaborative, interstate efforts to reduce visibility and health concerns related to particulate matter. Significantly, these increass in primary PM are additive to the secondary PM caused by the increases in $NO_X$ emissions.

**Mercury.** The reported figures for mercury are inconsistent with the fuel use forecast in the DEIS, and appear to be incorrect. Mercury emissions are reported on page 5-22 of the DEIS, which states that "total national mercury emissions in 2000 are projected to decrease in all scenarios, associated with decreases in coal consumption." But coal use increases in some reported scenarios (DEIS at 5-5). The mercury emissions must be recalculated and reported accurately before their significance can be evaluated.

**Carbon Dioxide.** The $CO_2$ emissions figures in the DEIS deviate significantly from other official energy forecasts, including those which form the basis of national climate policy, and so warrant further explanation. Open access transmission could provide $CO_2$ reduction benefits by improving the efficiency of the transmission system, reducing transmission line losses, and encouraging capital turnover, thus requiring less fuel consumption to meet end-use demands. However, baseline projections of $CO_2$ emissions in the DEIS suggest that open access could lead to a significant increase in coal-fired generation and, thus, $CO_2$ emissions from the electricity sector.

While $CO_2$ emissions increases in the rule scenarios are not large compared to the DEIS base cases, the base cases themselves include elements of FERC open access policy as well as other changes in assumptions. The base case (i.e., the High-Price-Differential base case) for the Competition-Favors-Coal scenario, for example, shows $CO_2$ emissions in 2000 which are about 104 million short tons (26 million metric tons of carbon equivalent) above the *Annual Energy Outlook 1996*[3] (AEO96) projections for that year. This increase in $CO_2$ represents nearly half of the emission reductions which the President's Climate Change Action Plan seeks from the utility sector and about one-quarter of the total national emission reduction goal for the year 2000. By 2010, the discrepancy between this DEIS base case and the AEO96 is 211 million short tons of $CO_2$, or 50 million metric tons of carbon.

The $CO_2$ emission estimates for the Constant-Price-Differential base case are very similar to AEO96 estimates. However, this DEIS base case assumes much lower natural gas prices than those used in AEO96; AEO96 projects average delivered natural gas prices to be $2.17, $2.23, and $2.41 per million Btu in 2000, 2005, and 2010 respectively, while the DEIS uses $1.67, $1.62, and $1.57. It is likely that AEO96 estimates of $CO_2$ emissions would be substantially lower if they were based on DEIS Constant-Price-Differential base case assumptions regarding natural gas prices.

Thus, it is unclear from the DEIS to what extent changes in $CO_2$ emissions are attributable to assumptions regarding case-by-case open access embedded in the DEIS base cases, or to differing assumptions regarding fuel prices, electricity demand growth, or other factors. Recent analysis indicates potential $CO_2$ impacts due to competition which are in the same range as the impacts implied by the difference between the DEIS base cases (which include competition due to open access) and the *Annual Energy Outlook 1996* (which does not). One recent study concluded that the potential impacts of increased competition could be in the range of 45 to 80 million short tons of $CO_2$ per year by 2000[10].

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[3] U.S. Department of Energy, Energy Information Administration. *Annual Energy Outlook 1996*, Washington, DC, 1996. AEO96 projections of utility sector $CO_2$ emissions are 2,106, 2,308, and 2,469 million short tons in 2000, 2005, and 2010 respectively. The DEIS High-Price-Differential base case estimates $CO_2$ emissions as 2,210 million short tons by 2000, rising to 2,671 million short tons by 2010.

### B. Implications of Uncertainty

Substantial uncertainty surrounds the prediction of the effects of generic open access transmission as proposed in the rule. This uncertainty reflects the difficulty of predicting how markets will respond to proposed policy changes, the inability to know what other factors might interact with these policy changes, and the inherent limitations of forecasting models in predicting future outcomes. The DEIS acknowledges the significance of uncertainty with respect to fuel prices and certain other factors.[11] See, e.g., DEIS at ES-6 and 6-1.

However, EPA believes the EIS should be more specific about other uncertainties and about the limitations of the CEUM model utilized in this analysis. CEQ guidance states: "The agency has the responsibility to make an informed judgment, and to estimate future impacts on that basis, especially if trends are ascertainable. . . . The agency cannot ignore these uncertain, but probable, effects of its decisions." 46 FR 18026, 18031 (1981) (question #18).

Among the uncertainties are the speed at which competitive markets will emerge and the extent of competitive effects on such factors as heat rates and reserve margins. The ability of complex transmission networks to absorb increased power flows is also difficult to project. There is also uncertainty regarding the accuracy of the CEUM model in predicting changes in generation and transmission markets.[12]

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[10] Lee, Henry and Darani, Negeen. Electricity Restructuring and the Environment. Center for Science and International Affairs and the Harvard Electricity Policy Group, Harvard University, Cambridge, MA, 1995. This study does not attempt to distinguish between wholesale and retail competition in electric power markets.

[11] EPA concurs with the DEIS's finding that emissions of $NO_x$ and other pollutants will vary substantially depending on assumed fuel prices. However, uncertainty with respect to fuel prices or other factors in no way minimizes the significance of potential emissions increases that might be attributable to the proposed rule.

[12] CEUM was designed primarily to analyze acid rain compliance strategies and costs and is therefore structurally focused on coal markets, sulfur dioxide emission reduction costs, and power plant dispatch. It was not designed to consider competition in general or the transmission system in particular.

EPA notes that the economic benefits that the DEIS attributes to the proposed rule appear rather modest when contrasted with the benefits attributed to generic open access in the NOPR itself. EPA is concerned that the DEIS analysis may understate the extent of power transactions that would be undertaken as a result of the rule. Given the extent of the uncertainties with regard to the pace and extent of competitive market development under open access, it is not hard to imagine that the volume of open access transactions could be much greater than that assumed in the DEIS. If so, levels of emissions of air pollutants attributable to the rule would likely increase in a similar fashion.

Because of the limitations inherent in forecasting models, these uncertainties cannot be eliminated. However, their importance should be communicated in the EIS through quantitative testing of key assumptions, as the DEIS does with some variables. In these comments, EPA identifies additional assumptions that should be subjected to further analysis.

The final EIS must acknowledge the possibility that economic and environmental effects of the proposed rule could be significantly larger (or smaller) than predicted. With respect to mitigation strategies, the FERC should therefore consider remedies with sufficient flexibility to address whatever adverse environmental impacts ultimately result from the rule.

## III. TECHNICAL DEFICIENCIES IN THE DEIS AND NECESSARY REVISIONS

Under regulations issued by the Council on Environmental Quality (CEQ) implementing NEPA, an EIS must analyze the reasonably foreseeable environmental impacts of the proposed rule. 40 C.F.R. 1508.8. The DEIS fails to meet this test on several grounds.

### A. Reference Case Assuming No Further Open Access

The "heart of the [EIS]" under the National Environmental Policy Act (NEPA) is the analysis of alternatives. Under CEQ regulations, an EIS must contain an analysis of alternatives, including both the proposed action and "the alternative of no action." 40 CFR 1502.14(d).

In EIS scoping comments filed on August 22, 1995, EPA stated that in order to comply with NEPA, the EIS must compare the environmental impacts reasonably anticipated under the proposed open access rule to those associated with a "no-action" baseline that assumes no further action by the FERC to implement open access. EPA does not recommend halting further open access actions as a final outcome of this rulemaking. However, examination of this baseline scenario is necessary in order for policymakers to assess the full breadth of environmental impacts associated with the proposed open access rule (or open access in general) and the range of mitigation options available, in compliance with NEPA.

The DEIS, however, treats case-by-case implementation of open access as the "no action" baseline. This does not meet the FERC's obligations under NEPA.

The FERC's assertion that continuing to grant open access on a case-by-case basis is the "no action" alternative ignores the fact that the case-by-case course of action is itself subject to NEPA's requirements. The relevant "no action" alternative to consider when evaluating open access orders on a case-by-case basis is, obviously, the alternative of not issuing such orders.

Whether case-by-case orders are viewed as a program, a set of related actions, or simply as a set of reasonably foreseeable future actions with cumulative impacts, NEPA, the CEQ regulations, and the case law require that the FERC prepare an EIS in which the cumulative envrionmental impacts of such orders are considered, in comparison to a "no action" base case of not taking those actions.

To the extent that each order has the effect of increasing emissions, the emissions enter the same regional airsheds (or in the case of $CO_2$, the atmosphere as a whole) and contribute together, in a cumulative manner, to the consequent effects on human health and the environment. For example, $NO_x$ emission increases from power plants in the 37 eastern states of the U.S., flowing from a set of case-by-case open access orders affecting transmission within this region, would cumulatively worsen ozone levels in the ozone non-attainment areas with in that region (e.g., on the eastern seaboard and in the upper Midwest). Courts have long held that a series of related actions implementing a common overall policy and affecting the environment of a common area in a cumulative manner require a programmatic EIS. See, e.g., Kleppe v. Sierra Club, 427 U.S. 390, 400 (1976) (stating that programmatic EIS was necessary for coal leasing program that was "a coherent plan of national scope"); American Public Transportation Ass'n v. Goldschmidt, 485 F. Supp. 811, 833 (D.D.C. 1980).

Even if the FERC's case-by-case approach as a whole would not trigger the programmatic EIS requirement, the FERC would be required to consider the environmental impacts of pending open access applications in the same EIS. Kleppe v. Sierra Club, 427 U.S. at 410 ("when several proposals . . . that will have cumulative or synergistic impact upon a region are pending concurrently before an agency their environmental consequences must be considered together.").

Moreover, when considering the environmental impacts of a specific open access approval, the FERC would be required to consider the cumulative effects of reasonably foreseeable future approvals, even if those approvals are not yet pending before the agency. E.g., NRDC v. Callaway, 524 F.2d 79, 89 (2nd Cir. 1975) (noting that the Navy's failure to consider effects of other reasonably foreseeable dredging projects in the area "is an example of the isolated decisionmaking sought to be eliminated by NEPA."); Fritiofson v. Alexander, 772 F.2d 1225, 1245 (5th Cir. 1985) (Corps of Engineers, when deciding on a dredging permit, had to consider cumulative impacts of other reasonably foreseeable actions around the island); LaFlamme v. FERC, 852 F.2d 389, 401 (9th Cir 1988) (FERC is required to look at effects of "reasonably foreseeable future actions", including those of pending and other reasonably foreseeable projects, on water ecosystem). In Fritiofson, the Fifth Circuit discussed the CEQ regulations governing consideration of cumulative effects. The court noted that under the CEQ regulations, an agency should:

> consider (1) past and present actions without regard to whether they themselves triggered NEPA responsibilities and (2) future actions that are "reasonably foreseeable," even if they are not yet proposals . . . ." 40 C.F.R. 1508.7
>
> Fritiofson, 772 F.2d at 1245.

The court continued:

> Given the CEQ regulations, it seems to us that a meaningful cumulative-effects study must identify: (1) the area in which effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions -- past, proposed, and reasonably foreseeable -- that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate.
>
> Id. (citations omitted).

In addition, for the most part, the proposed open access rule substitutes for and replaces the issuance of case-by-case orders. It follows that the "no action" alternative for the rule must be the same as the "no action" alternative for the case-by-case approach.

The alternative of issuing no further open access orders is, in fact, an alternative the FERC is authorized to adopt, depending on the FERC's ultimate findings of fact and policy determinations. Whether the FERC is proceeding case-by-case under sections 211 and 212 of the Federal Power Act or by rule under sections 205 and 206, the Commission is authorized -- but not required -- to take action providing for open access. Moreover, NEPA requires that an agency consider the alternative of taking no action even if that alternative is beyond its current authority. CEQ's regulations state that "reasonable alternatives not within the jurisdiction of the lead agency must also be included." 40 CFR 1502.14(c). As explained in CEQ guidance:

> Alternatives that are outside the scope of what Congress has approved or funded must still be evaluated in the EIS if they are reasonable, because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies.
>
> 46 FR 18027 (question #2b).

CEQ guidance also notes:

> the regulations require the analysis of a no action alternative even if the agency is under a court order or legislative command to act. This analysis provides a benchmark, enabling decision-makers to compare the magnitude of environmental effects of the action alternatives.
>
> Id. (question #3).[13]

EPA therefore maintains that the Commission must develop a "no action" scenario based on no further open access actions and consider the full differential in environmental impacts due to the emissions differences between that "no action" scenario and the proposed rule in its decision making. Given the methodological approach used in the EIS analysis, EPA believes the "no action" scenario of no further open access could be represented by making the following changes to the assumptions in the DEIS base cases:

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[13] EPA notes that CEQ guidance addresses the development of a no action alternative under two circumstances: the first involving "an action such as updating a land management plan where ongoing programs initiated under existing legislation and regulations will continue, even as new plans are developed"; and the second involving "federal decisions on proposals for projects." Id. It is EPA's position that the guidance is not applicable to the instant case because CEQ's guidance did not envision the circumstances surrounding the FERC's open access rule. The FERC's case-by-case approach is at its infancy, in that only 9 requests for wheeling under section 211 have been granted to date (NOPR at 48-49), and cannot be considered an "ongoing program." Furthermore, as noted above, FERC has yet to study the environmental impacts of its case-by-case approach to open access; such a new and unstudied approach is not the "ongoing program" that CEQ's guidance contemplated would be used as a no action alternative.

- Transmission usage price remains unchanged from the base year;
- Reserve margin criteria for capacity additions remain unchanged at 17 percent; and
- Plant availability remains unchanged at 80 percent.

Consistent with other EIS scenarios, this proxy for a "no action" scenario should be analyzed under both fuel price forecasts.

This baseline should then be used to determine the amount of emissions increases that are reasonably anticipated to occur from implementation of the proposed rule, as well as to develop mitigation measures. In fact, EPA maintains that the real significance of the "no action" reference case issue is the need for the FERC to mitigate the emissions increases that exceed the reference case levels and that result from open access.

**B. Assumptions Regarding Transmission Capability**

The DEIS assumes that the proposed rule will create economic benefits by increasing the ease of transactions in the wholesale electricity market. Treatment of the transmission system in the CEUM model, however, makes several restrictive assumptions about existing and future transmission capability. These assumptions must be modified for comparison purposes in the final EIS. There are two distinct parts of this issue: initial assumptions regarding existing transmission capability; and assumptions about future expansion and upgrading of the transmission system.

**Derating of Transmission Capability.** The DEIS applies a nationwide 25% reduction (or derating) to the interregional transmission transfer capacities that are reported by the North American Electric Reliability Council (NERC). NERC bases its reported capabilities on detailed studies and modeling carried out by reliability regions. These regions are responsible for evaluating normal, contingency, and emergency conditions and maintaining reliable transmission capacity under almost all conditions. The 25% derating limits the ability of low-cost power producers to reach markets in some regions of the model. In the DEIS there are some important transmission links (particularly between the Midwest and the East Coast) which are operating under full loads in the rule scenarios. These links may be overly constrained by the derating assumption.

The consequences of this initial capacity derating are impossible to evaluate without further modeling work. The DEIS states that there would be no change in rule scenario impacts because any change in this derating would apply to all cases equally. But it is possible that more electricity would actually be transferred between some regions under the rule scenarios than under the base cases, depending on whether interconnections between those regions were fully loaded in base cases, as compared to rule scenarios. Shifts in the location of generation -- and emissions -- may result from changing transmission assumptions, and this information could be important for base cases, rule scenarios, or both.

EPA believes that the assumption of a 25% nationwide derating of transmission capacity prevents an adequate examination of likely increases in transactions. Some derating may be reasonable, but 25% is quite restrictive and it is highly unlikely that derating would be uniform across the country, if only because some regions already experience substantial two-way power flows and include such flows in their reported transfer capability. In addition, the increasing use of interruptible contracts and other flexible power transactions increases the ability of system operators to fully use available capability without compromising reliability. This is because loads can be removed if necessary. While there may be no available way to model such variations realistically, testing other representative levels of derating should be reported in the final EIS. (See Alternative Transmission Assumptions below.)

**Transmission Expansion and Enhancement.** Among the key assumptions in the DEIS is that adoption of the proposed open access rule would not affect the future capability of the transmission system. This assumption is fundamentally at odds with a major premise of the proposed rule, which is to encourage the development of a rational, more efficient transmission system. Not only is this internally inconsistent, but this modeling constraint on transmission capability may also result in an understatement of the impacts of the rule.

The assumption that future transmission capability would be unaffected by the rule is justified on the grounds that the rule "does not remove principal barriers to construction of new lines" (DEIS at 3-8). Yet the NOPR assumes that transmission facilities will be expanded and cites efficient expansion as one of the benefits of the rule:

> [T]ransmitting companies offering open access services across their systems could end up constructing a disproportionate share of new transmission facilities.
>
> Expansion cannot be efficient under a patchwork of open access transmission systems....(A) patchwork of open access systems will not result in the least cost expansion of the Nation's transmission grids.
>
> NOPR at 70.

Thus, the FERC clearly anticipated that its open access rule would facilitate expansion of the transmission system.

The FERC's restrictive transmission assumptions are also inconsistent with the conclusions of certain states with regard to open access. For example, after examining the environmental impact of increasing competition in the electricity industry, the New York Department of Public Service concluded that transmission expansion would likely occur:

> In the long term, a competitive generation market could increase demands on the transmission system and present the need for additional transmission facilities.
>
> ...Although power import capability to the west is currently limited, future system expansion and construction would likely alleviate these constraints if the price of power in Ohio and Pennsylvania remains low compared to New York.[14]

Indeed, opportunities for cost-effective transmission enhancements undoubtedly exist, and the proposed rule offers powerful legal and economic incentives for new investments in transmission capacity. The rule would impose an "expansion obligation" on transmission owners by requiring any public utility to "offer to enlarge its transmission capacity (or expand its ancillary service facilities) if necessary to provide transmission services."[15] NOPR at 103.

The proposed open access rule also provides significant financial incentives for utilities to expand transmission capacity. Transmission owners are given the opportunity to earn increased profits through an increase in transmission volume, thereby providing an additional incentive for new transmission investment.

The DEIS implies that despite these incentives for transmission expansion, any new efforts to expand transmission will be thwarted by siting barriers at the state and local level. In effect, the DEIS assumes that not a single one of the new lines that might be proposed as a result of the rule would actually be built. This assumption is unreasonable in that new transmission lines are, in fact, sited and built every year in this country despite the existence of siting barriers.[16]

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[14] New York Department of Public Service, Recommended Full Environmental Assessment Form, pp. 11 and 21, November 17, 1995, adopted in full in Recommended Decision, Case 94-E-0952, December 22, 1995.

[15] The NOPR states that the transmission-owner could be excused from this obligation as long as it has made "a good faith effort to obtain the necessary approvals and property rights." NOPR at 104. However, "a utility may bear a heavy burden in demonstrating that it cannot enlarge its transmission capacity to meet a new transmission request" (id. n. 197).

Furthermore, technologies are available to expand transmission capability without building new lines. Unlike new transmission lines, upgrades of existing lines face relatively few siting obstacles. In some cases, transmission capability of existing facilities can be increased by "re-conductoring." Moreover, new solid-state power electronics technologies such as thyristors and condensers (collectively known as Flexible AC Transmission Systems, or FACTS) can increase the effective capability of certain lines that currently face operational constraints. According to the Electric Power Research Institute, FACTS technologies could increase power flow in certain lines by 50%.[17]

The DEIS correctly notes that

> Competitive markets usually spur innovation. Some innovations may develop more quickly with increased competition....Open access and competition may...encourage the new FACTS technology now being developed.
>
> DEIS at ES-13.

Yet, the DEIS assumes no enhancements to existing transmission facilities, noting that "[i]nnovations that may increase transfer capabilities are too speculative to be used as a basis for estimating the creation of additional capability" (DEIS at 3-8). Given the premises of the NOPR and the DEIS with regard to transmission expansion and enhancement and the importance of transmission capability in the analysis, this approach is unreasonable.

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[16] According to the North American Electric Reliability Council, 4,231 miles of transmission lines have been built since 1990, representing a 6% expansion of the transmission system. Another 8,851 miles of new lines is currently slated for completion within ten years.

[17] Narain G. Hingorani and Karl E. Stahlkopf, "High-Power Electronics," *Scientific American*, pp. 8-9, November 1993.

Moreover, while the DEIS could have relied on the same logic to fix heat rates and reserve margins in its analysis, it instead assumed that these factors, unlike transmission capability, would change due to open access.

Given the incentives provided for new transmission investments in the proposed rule and the likely existence of opportunities for transmission enhancements, EPA believes that the DEIS assumption that transmission facilities would be neither expanded nor enhanced as a result of the proposed rule is unacceptable and renders the conclusions of the DEIS unreliable.

**Alternative Transmission Assumptions.** EPA believes that the final EIS must consider alternative assumptions regarding transmission capability, with respect to base cases as well as rule scenarios. The alternatives should assume little or no derating of the transmission system. Furthermore, they should allow for some increase in transmission capability over time to reflect expansion and enhancement of transmission facilities as a result of open access. The combined effects of relaxing the derating constraint and assuming expansion and enhancement of transmission capability over time could be represented by assuming the following percentages of NERC-reported transfer capability: 95% in 2000; 100% in 2005; and 105% in 2010. These alternative transmission capability assumptions should be tested with respect to at least one base case, such as the Constant-Price-Differential base case, and at least one scenario, such as the Competition-Favors-Coal scenario.

The results of this alternative transmission capability scenario should indicate how sensitive the findings of the DEIS are to different assumptions regarding transmission constraints. The final EIS must thoroughly explain any uncertainty with regard to emissions changes arising from differing assumptions about transmission capability.

### C. Scenario/Baseline Comparisons

The DEIS develops three scenarios to portray the effects the FERC's proposed rule may have on electric utility markets. These scenarios are defined by changes in the relative performance of coal-fired and natural gas-fired electricity generators. In one of the scenarios, performance is unchanged (Low-Response scenario); in the second, coal-fired generators gain an advantage (Competition-Favors-Coal scenario); in the third, natural gas-fired generators gain the advantage (Competition-Favors-Gas scenario). The rationale for this is that power producers will face different incentives when they are given access to new markets through open access transmission. Much of the economic and environmental impact of the proposed rule, relative to the base cases, is attributable to these assumptions about electric generator performance.

The DEIS compares each of the two competitive scenarios in which generator performance changes to only one base case, not to both. The scenario in which coal-fired generators become more competitive, is compared only to the base case in which coal prices are already relatively cheap (the High-Price-Differential base case). The scenario in which natural gas generators become more competitive is compared only to the base case in which gas prices are relatively cheap (the Constant-Price-Differential base case). This approach probably understates differences between the base cases and the rule scenarios. This is because the only comparisons made between the base cases and the rule scenarios are those in which the competitive impacts of the rule and the effects of relative fuel prices are reinforcing. The base cases already grant an advantage to coal- or gas-fired generators, adding the performance improvements in the rule scenarios reinforces this advantage but only slightly. Not included are the cases where the generators who are disadvantaged by fuel prices are able to improve their performance and regain part of their market. It is unclear how this tradeoff would affect the results of the analysis, but it is likely that the differences between the base cases and the rule scenarios would be greater under such conditions.

Significantly, the approach taken in the DEIS omits a very likely outcome. EPA believes that the base case which assumes a roughly constant price differential between coal and natural gas is the more likely of the base cases. Such fuel price assumptions favor natural gas. However, EPA believes that both coal and gas-fired generators will be under intense pressure to improve their performance regardless of fuel prices. It is impossible to forecast which generators will be more successful. Therefore, the most likely base case must be compared to both competitive scenarios, not just to the scenario favoring natural gas.

EPA believes that an additional CEUM run, using the fuel prices from the Constant-Price-Differential base case with the competitive generation and transmission assumptions from the Competition-Favors-Coal scenario, is necessary for an adequate analysis. The other possible comparison (High-Price-Differential base case with Competition-Favors-Gas scenario) could be included for completeness, although EPA believes it to be both less environmentally significant and probably less likely to occur.

### D. Assumptions About Air Quality Regulation

Predicting the environmental effects of open access is made more difficult by the continuing evolution of air quality regulation. Two important areas of uncertainty cited in the DEIS are: (1) the implementation of Phase III $NO_X$ emission limitations in the Northeast states, and (2) the adoption of Acid Rain Program Phase II $NO_X$ emission limitations under Title IV of the Clean Air Act (CAA). The DEIS assumes that neither of these actions is ultimately taken. For the reasons discussed below, EPA is not recommending that the FERC change its assumptions about future air quality regulations.

Recognizing the need for regional cooperation to improve air quality, 13 states in the Northeast (i.e., the Ozone Transport Region) are working together through the Ozone Transport Commission to develop a coordinated approach to achieving attainment. The centerpiece of this effort is a Memorandum Of Understanding (MOU) which establishes an emissions cap and trading regime for $NO_X$ emissions from stationary sources (primarily utility boilers), beginning in 1999.[18] For most of the OTR, allowable $NO_X$ emission rates (subject to trading) would be ratcheted down to approximately 0.2 lbs/mmBtu by May 1999 ("OTC Phase II") and to 0.15 lbs/mmBtu or less by May 2003 ("OTC Phase III").[19]

The OTC Phase II reductions are designed to facilitate attainment in most of the OTR's ozone nonattainment areas (including Boston and Washington, D.C.) as required by 1999. However, achieving attainment in the "severe" nonattainment areas of Baltimore, Philadelphia, and New York/New Jersey will require further reductions in $NO_X$ emissions, such as those assumed in OTC Phase III.[20] OTC Phase III is expected to result in $NO_X$ emission reductions of about 72,000 tons on a five-month seasonal basis.[21]

The DEIS assumes implementation of OTC Phase II, but not OTC Phase III. Implementation of OTC Phase III would tend to widen regional disparities in $NO_X$ emission rates. It is these regional disparities that create the potential for shifts in generating patterns under the base cases and rule scenarios to cause increases in $NO_X$ emissions.

Another potential change in air quality regulation is EPA's recently proposed Acid Rain Phase II $NO_X$ rule. The rule, proposed on January 19, 1996, would establish $NO_X$ emission limits for most existing coal-fired utility boilers. The emission limits in the proposed rule, which are different for each boiler type, are estimated to result in about 820,000 tons of $NO_X$ reductions nationwide. 61 FR 1442 (1996). However, the $NO_X$ rule would apply to boilers in nonattainment areas as well as attainment areas, and boilers in nonattainment areas (e.g., in the OTR) will be subject to emission limits under Title I of the CAA that are more stringent than those under Title IV.

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[18] *Memorandum of Understanding Among the States of the Ozone Transport Commission on Development of a Regional Strategy Concerning the Control of Stationary Source Nitrogen Oxide Emissions*, September 27, 1994. Thus far, the MOU has been signed by representatives from 11 of the 13 OTC states.

[19] The OTC's Phase I strategy required 1994 State Implementation Plan (SIP) revisions to include Reasonably Available Control Technologies (RACT) on utility boilers.

[20] Under the CAAA, Baltimore and Philadelphia are required to reach attainment by 2005 and New York/New Jersey by 2007. Because attainment demonstration is based on a three-year average, OTC Phase III has chosen 2003 as the target year for further $NO_X$ emission reductions.

[21] Annual $NO_x$ emission reductions would be 170,000 tons, assuming the same controls. Source: Gregory Stella, E.H. Pechan Associates, letter to Barry Gilbert, U.S. EPA, December 1995.

EPA estimates that implementation of the Acid Rain Phase II $NO_X$ rule would reduce $NO_X$ emissions from utility boilers in attainment areas in four key states upwind of the OTR (Ohio, Indiana, West Virginia, and Kentucky) by about 210,000 tons annually from current levels.[22]

EPA anticipates that the Acid Rain Phase II $NO_X$ rule, if implemented as proposed, would tend to narrow regional differences in $NO_X$ emission rates, such as between the Ohio Valley and the Northeast. It is important to note, however, that the Acid Rain Phase II $NO_X$ rule would not eliminate the regional differences in $NO_X$ emission rates which create a potential for emissions increases attributable to open access. Under the proposed $NO_X$ rule, Group 1 boilers[23] in attainment areas in the Ohio Valley states could emit $NO_X$ at .38 to .45 lbs/mmBtu, or about twice the rate required in the OTR during Phase II and up to three times the rate allowed in Phase III. Similarly, Group 2 boilers[24] would be required to achieve $NO_X$ emission rates of between 0.68 and 0.94 lbs/mmBtu. Depending on the boiler type, these rates are 3 to 5 times higher than the rate required in the OTR beginning in 1999. Moreover, under Phase III of the OTC's MOU these plants could emit $NO_X$ at 5 to 6 times the OTR rate, or greater. The proposed Acid Rain Phase II $NO_X$ rule is subject to public comment and could be changed substantially before it becomes final.

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[22] Calculation derived from EPA Coal-fired Boiler Database.

[23] Group 1 boilers are dry-bottom wall-fired boilers and tangentially fired boilers.

[24] Group 2 boilers include cell burners, cyclone boilers, wet bottom boilers, and other types of coal-fired boilers.

Ideally, the EIS should assume, for the base cases and rule scenarios, that both OTR Phase III and Acid Rain Phase II $NO_X$ rule will be implemented as planned. Each of these proposals represents a reasonable guess of what policy will ultimately be implemented. Moreover, it would be desirable for the EIS to subject each of these policies to a sensitivity analysis which evaluates a non-implementation scenario, in recognition that they are proposals whose final form is not certain.

EPA acknowledges, however, that revising the DEIS to incorporate new assumptions about future air quality regulations would be a substantial, time-consuming undertaking, even without additional sensitivity analyses. EPA notes that the two regulatory actions concerning $NO_X$ tend to offset each other with respect to regional differences in emission limits. EPA believes that, given currently available information, the DEIS modeling assumptions regarding future air quality regulations are acceptable. Nevertheless, the failure to reflect future air regulations in the modeling assumptions increases uncertainty in the analysis.

In a related matter, EPA identified a significant inconsistency between $NO_X$ emissions data utilized in the DEIS and EPA's own $NO_X$ database. Table 6.1 in the DEIS presents the uncontrolled $NO_X$ emissions from Group 2 boilers, as well as the potential $NO_X$ reductions from those boilers. The table estimates that in the year 2000 uncontrolled $NO_X$ emissions from Group 2 boilers will be 380,100 tons. DEIS at 6-10. EPA has developed a database containing emissions and operating information on all coal-fired boilers in the U.S. which has been used in EPA's Regulatory Impact Analysis (RIA) of the proposed Phase II $NO_X$ rule. The database contains information on boiler-specific uncontrolled $NO_X$ emission rates (in lb/mmBtu) and heat input (in mmBtu) for 1990. According to EPA's database, the uncontrolled $NO_X$ emissions from Group 2 boilers in 1990 in the East North Central and South Atlantic regions in the DEIS were about 1,130,000 tons, significantly higher than the values presented in Table 6.1. EPA recommends that the final EIS reconcile this significant discrepancy between the data used in the DEIS and EPA's database.

## E. Water and Fishery Impacts

The electric utility industry has significant adverse impacts on water resources. The DEIS provides regional estimates for changes in water withdrawals, water consumption, and land use for both power generation and resource extraction, and changes in solid waste generation from power generation. It also describes, in general terms, other environmental impacts, such as surface water contamination from chemical and metal discharges and storage pile run-off. The DEIS, however, fails to discuss three important impacts from electricity generation: atmospheric deposition of air pollutants to water bodies, thermal discharges, and impairment of fisheries.

The role of air pollution as an important contributor to water pollution has become the subject of increasing scientific and regulatory concern. As noted in EPA's report to Congress[25], recent studies indicate that air sources are a major contributor of mercury to Wisconsin lakes, and even modest increases in atmospheric deposition of mercury could directly lead to higher mercury levels in fish. Thus, changes in air emissions could have significant effects on the nation's water bodies as well.

The DEIS also fails to note the important impacts that generating plants have on fish. Power plants withdraw surface water for cooling purposes. The amount of water withdrawn for cooling, and the resultant velocities at the mouth of the intake pipes, can impair a fishery if sufficient fish, or the prey of fish, are impinged on intake structures or entrained in the water flow through the plant. Impingement and entrainment effects vary widely from plant to plant depending on fish protection and mitigation technologies used at the plant. In addition, power plants discharge cooling water that is considerably warmer than the receiving surface waters. This increase in heat can also impair a fishery by raising the temperature of the aquatic habitat above that which can support the fishery.

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[25] *Deposition of Air Pollutants to Great Waters*, U.S. EPA, 1993.

EPA believes that the final EIS must more thoroughly examine the question of multi-media impacts due to atmospheric deposition of air pollutants to water bodies and impacts to fishery resources from increased water temperature and impingement/entrainment. At a minimum, the final EIS should provide a breakdown of the following information: electricity generation and capacity by fuel type and water withdrawal and consumption for generation. This information will give the FERC and the public a better understanding of the water and fishery impacts of the proposed open access rule.

## F. Reporting of Regional Data

EPA is concerned that the geographic breakdown utilized in the DEIS analysis may inadvertently obscure emissions increases in one of the most environmentally sensitive regions: the Ohio Valley. Because the data is organized by U.S. Census regions, the most critical states upwind of the OTR are divided among three different regions for purposes of the DEIS.

The Ohio Valley is particularly sensitive environmentally because it is upwind of numerous ozone nonattainment areas in the Northeast and contains substantial underutilized generating capacity with high $NO_X$ emission rates. The Ohio Valley states whose $NO_X$ emissions are most likely to exacerbate ozone problems in the OTR are Ohio, Indiana, West Virginia, and Kentucky..

In the DEIS, these four critical states are divided among three different regions for analytical purposes. Changes in $NO_X$ emissions in these states are averaged with data from other states which EPA believes are less likely to experience a significant increase in $NO_X$ emissions and less likely to affect the OTR. Should the model indicate a significant increase in $NO_X$ emissions in the Ohio Valley, the effects may be obscured by the manner in which the data are reported in the DEIS.

EPA believes this problem could be resolved by reporting additional data in the EIS. The final EIS should include a table or tables indicating projected $NO_X$ emissions in a contiguous Ohio Valley region comprised by the states of Ohio, Indiana, West Virginia, and Kentucky.[26] EPA believes it would be sufficient to utilize this regional grouping for reporting purposes only; the regional grouping for modeling purposes need not be changed.

### G. Climate Change

As discussed in section II(A) of these comments, the DEIS reports baseline emissions of $CO_2$ which are significantly above the official $CO_2$ emissions estimates in the Annual Energy Outlook 1996. The final EIS must include some description of the reasons for this discrepancy, specifically stating what portion of increased emissions is due to competitive effects as opposed to other modeling assumptions.

## IV. MITIGATION OF ENVIRONMENTAL IMPACTS

As discussed above, EPA supports open access and other actions to promote competition in the electricity industry, but with safeguards to protect the environment. The DEIS and the information in these comments demonstrate that the open access rule, as presently structured (as well as the FERC's existing open access policies), are likely to cause substantial increases in air pollution that are dangerous to the public health and environment. The FERC, EPA, DOE, and the states need to work together to ensure that open access does not impede attainment of our environmental goals. Each agency should exercise the full extent of its authority to attain this goal.

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[26] Another approach would be to report emissions data by state. However, given the public attention which has been focused on the potential for transport of $NO_X$ emission from the Ohio Valley, the reporting of emissions data for the contiguous Ohio Valley region should facilitate greater public understanding of the conclusions of the EIS.

Because of the likely adverse environmental impacts of the open access rule and because of the complex jurisdictional issues associated with electricity and air quality regulation, analysis of mitigation efforts is one of the most critical elements of the DEIS. The mitigation section of the DEIS is insufficient, primarily because it espouses an overly restrictive view of the FERC's statutory authority to adopt measures for mitigating adverse environmental impacts of the proposed rule and discourages state efforts to mitigate.

In EPA's and other parties' EIS scoping comments and comments on the proposed rule, several mitigation measures were proposed for adoption by the FERC or by states. The DEIS rejects all of these mitigation measures as inappropriate either because the FERC supposedly lacks statutory authority to implement measures proposed for its own adoption,[27] or because measures proposed for state adoption may adversely affect transmission or sales for resale.[28] The FERC's authority is not as limited as set forth in the DEIS; moreover, there are mitigation measures that the FERC has the authority to implement. In addition, the DEIS's criticism of proposed state mitigation measures is premature and may unnecessarily discourage state efforts at mitigation.

## A. The FERC's Statutory Authority to Mitigate Adverse Environmental Impacts

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[27] The DEIS states in essence that it is "questionable" that the FERC has any statutory authority to adopt any mitigation measures. DEIS at 6-4. According to the DEIS: "non-transaction-oriented mitigation strategies...are outside the traditional purview and statutory authority of the Commission, except to the extent they might have wholesale rate impacts." Id. At 6-2.

[28] The DEIS makes only negative comments about the mitigation measures proposed for states by various parties. According to the DEIS, state efforts to prohibit power purchases from plants subject to less stringent environmental requirements, or to impute externality values to such power, "raise a number of difficult issues, particularly issues involving separation of jurisdictional authority. . . . Many utilities serve retail customers in more than one state, and therefore the cost consequences of one state's actions could affect other states. . . . Such a strategy also could work counter to the interest of electricity consumers in the state that employs it." DEIS at 6-8. The DEIS thereby seems to suggest that any state mitigation measure would in some way involve the FERC's authority and that the FERC might interfere with any state mitigation.

The DEIS fails to describe accurately the FERC's statutory authority to take action to mitigate the potential adverse environmental impacts of the proposed open access rule. Despite the DEIS, the FERC has authority to mitigate the adverse environmental impacts of the open access rule. The Federal Power Act (FPA) establishes the FERC's jurisdiction and the range of decisions the FERC is authorized to make; NEPA requires the FERC to consider environmental protection when making decisions within that jurisdiction and range. FPA and NEPA give the FERC authority to take mitigation actions.

Under the FPA, the FERC must act in the public interest. The FPA states that the FERC has jurisdiction over facilities for "the transmission of electric energy in interstate commerce" or for "the sale of electric energy at wholesale in interstate commerce". 16 U.S.C. 824(b)(1).[29] According to the FPA, federal regulation of such transmission and wholesale sale of electricity is "necessary in the public interest". 16 U.S.C. 824(a). Further, the FPA requires the FERC to regulate certain aspects of transmission and wholesale sales. For example, the FERC must ensure that any rate or any rule, practice, or contract affecting a rate is "just and reasonable" and is not "unjust, unreasonable, unduly discriminatory or preferential". 16 U.S.C. 824e(a); see also 16 U.S.C. 824d(a) and (b). The determination of whether rates are just and reasonable includes consideration of, inter alia, whether the rates are in the public interest. See, e.g., FPC v. Natural Gas Pipeline, 315 U.S. 575, 583 (1942) (stating that "the object of price regulation" is "the protection of the public interest"); FPC v. Sierra Power, 350 U.S. 348, 355 (1956) (holding that the Commission may find rates to be unjust and unreasonable because they are "so low as to adversely affect the public interest"); and City of Huntington, Indiana v. FPC, 498 F. 2d. 778, 783 (D.C. Cir. 1974) (stating that the Commission has "general responsibility of carrying out its regulatory tasks in a manner what will advance the public interest"). In addition, the FERC may order a transmitting utility to provide transmission service to any person generating electric energy for sale for resale if certain requirements are met and such order is "in the public interest". 16 U.S.C. 824j(a). One of these requirements is that the rates, terms, and conditions of the transmission service must "promote the economically efficient transmission and generation of electricity." 16 U.S.C. 824k(a).

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[29] However, the FPA limits FERC's jurisdiction, stating that the FERC "shall not have jurisdiction, except as specifically provided [in the FPA],....over facilities used for the generation of electric energy". Id. The FERC also lacks jurisdiction over "facilities used in local distribution or only for the transmission of electric energy in intrastate commerce" or "facilities for the transmission of electric energy consumed wholly by the transmitter." Id.

Based on the express terms and purposes of the FPA alone, the requirement that the FERC act "in the public interest" has been read primarily as "a charge to promote the orderly production of plentiful supplies of electric energy...at just and reasonable rates." NAACP v. FPC, 425 U.S. 662, 670 (1976). However, NEPA mandated that federal agencies, like the FERC:

> 'use all practicable means' to avoid environmental 'degradation,' and to preserve 'natural aspects of our national heritage' to the extent consistent with 'other essential considerations of national policy...' 42 U.S.C. 4331(b)...Congress directed federal agencies to consider 'to the fullest extent possible' the environmental impact of their policies. 42 U.S.C. 4332.
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> Public Service v. U.S.N.R.C., 582 F.2d 77, 81 (1st Cir. 1978), cert. den., 439 U.S. 1046 (1978).

See also Calvert Cliffs Coordinating Committee v. U.S. Atomic Energy Comm'n, 449 F.2d 1109, 1112 (D.C. Cir. 1971). NEPA, in effect, requires that environmental factors be considered when determinations are made concerning the "public interest" and "just and reasonable rates" under the FPA. Thus, the FERC, under the FPA as informed by NEPA, is authorized to take measures to ensure its actions account for environmental concerns (i.e., that its actions are "in the public interest").

Under NEPA, the FERC is required to consider environmental impacts when making decisions under the FPA, even though the FPA does not explicitly include the environment in the public interest standard. See, e.g., NRDC v. U.S.E.P.A, 859 F.2d 156, 169 (D.C. Cir. 1988); City of Davis v. Coleman, 521 F.2d 661, 676 (9th Cir. 1975). Moreover, NEPA also provides authority for the FERC to base its decisions on environmental factors. See, e.g., Public Service, 582 F.2d at 81 and ns. 6 and 7 (under NEPA, the U.S. Nuclear Regulatory Commission (NRC) must consider, and is authorized to act based upon, the environmental impacts of transmission line within its jurisdiction even though environmental protection is not a factor expressly required to be considered under the NRC's organic statute); Zabel v. Tabb, 430 F.2d 199, 213-14 (5th Cir 1970) (NEPA empowers the Army Corps of Engineers to base its decisions on environmental factors, even though the Rivers and Harbors Act does not explicitly allow the agency to take actions solely for environmental reasons), cert. denied, 401 U.S. 910 (1971); EDF v. Mathews, 410 F. Supp. 336, 338 (D.D.C. 1976) ("NEPA provides FDA with supplementary authority to base its substantive decisions on all environmental considerations including those not expressly identified in the [Federal Food, Drug, and Cosmetic Act] and FDA's other statutes.") (cited with approval in Marshall Minerals v. FDA, 661 F.2d 409, 424 n.21 (5th Cir. 1981), reh'g denied, 671 F.2d 1379 (1982)).

Consequently, under FPA and NEPA, the FERC has the authority to decline to take an action within its jurisdiction (e.g., the action of approving rates, terms, and conditions for open access transmission as just and reasonable under FPA section 205 or 206) unless measures are taken to mitigate the adverse environmental impacts that would otherwise result from that action and that would render the action not in the public interest. This is not to argue that the FERC has authority to impose conditions in the open access rule that address environmental problems other than those that result from the decision to adopt open access transmission service. In NAACP, 425 U.S. at 670-71, the Court rejected an effort to address employment discrimination with affirmative action requirements because the Court found an insufficient relationship to the activity the Federal Power Commission (FPC) was regulating. Similarly, in NRDC, the Court rejected an attempt by EPA to impose conditions addressing environmental conditions "[u]nrelated to [e]ffluents," the subject of the agency's jurisdiction. NRDC, 859 F.2d at 168.

The Clean Water Act authorizes EPA to issue or deny water discharge permits to new point sources under the Clean Water Act. The Court held that the Clean Water Act empowers EPA to place in the water discharge permit "NEPA-inspired conditions" that relate to the source's effluent discharges, or to deny the permit altogether based on concerns about those effluent discharges. Id. at 170. EPA, however, asserted additional authority to place conditions in the permit based on concerns "unrelated to effluents," i.e., concerns over the location of the plant site or the manner of construction that had no bearing on the location, volume, or quality of the plant's effluent discharges. The Court rejected this assertion, stating that EPA was "powerless to impose permit conditions unrelated to the discharge itself." Id.

But these cases do not bar the FERC from deciding to impose a mitigation requirement to address a problem that is causally related to the subject matter of its regulation. The basic principle of NEPA is that an agency that has the power to create an environmental problem must have the power to cure it, even if it means not taking an otherwise desirable action. In this case there is a clear nexus between more favorable terms of open access transmission, increased inter-regional transmission of electricity, and (unless mitigated) the consequent increase in emissions from plants providing that electricity. That nexus warrants the FERC's establishment of an appropriate mitigation mechanism.

The FERC's establishment of a mitigation mechanism would not run afoul of 16 U.S.C. 824(b)(1), which states that the FERC "shall not have jurisdiction, except as specifically provided [in the FPA],....over facilities used for the generation of electric energy". The FERC's regulation of transmission tariffs necessarily has manifold indirect effects on generation sources. The proposed mitigation mechanism would influence generation sources in a similar, indirect manner.

Moreover, if it were concluded that the FERC could not impose and implement a specific mitigation mechanism for open access transmission because of the limit on FERC jurisdiction over generation, the FERC could, instead, deny open access service unless there is a showing that the service will not have an adverse environmental impact. Under this approach, EPA, in cooperation with states (e.g., the states in OTAG), would recommend and establish a mitigation mechanism that could be entered into by a customer seeking open access service and used by such customer to make the necessary environmental demonstration supporting the provision of the service. The FERC would rule on whether the mitigation mechanism presented by the customer and the evidence on the likely effectiveness of the mechanism were sufficient to make the environmental demonstration. The mitigation mechanism would not be a condition of the open access tariff and so the FERC would not have an ongoing role to oversee or enforce the mitigation mechanism. EPA and the states, under their respective authorities, would have this responsibility.

In implementing section 210 of the Public Utility Regulatory Policies Act, the FERC took the approach of declining to act because of the potential adverse environmental impacts of the action. Section 210 required the FERC to prescribe regulations "to encourage cogeneration and small power production." 16 U.S.C. 824a-3(a). The regulations had to insure that the rates at which utilities purchase electricity from or sell to qualifying facilities are just and reasonable and not discriminatory. In addition, the regulations had to exempt such facilities from regulatory requirements generally applicable to utilities. 16 U.S.C. 824a-3(b) and (c). In developing the regulations, the FERC noted that it is "required under...NEPA... to take the environmental effects of...encouragement [of cogeneration and small power production] into account." 45 FR 17959, 17964 (1980). The FERC therefore analyzed the impacts of approving various types of facilities as "qualifying facilities." Because of its concern that "diesel and dual-fuel commercial cogeneration facilities in the New York City area had the potential to cause environmentally significant effects" (46 FR 33025 (1981)), the FERC issued regulations that excluded new diesel cogeneration facilities from being "qualifying facilities." 45 FR 17964.

The FERC subsequently modified the regulations to allow such facilities to apply for qualifying status on a case-by-case basis so that it could "consider the emission characteristics of the facility, and the number of qualifying facilities in the vicinity of the applicant." 45 FR 33958, 33963 (1980). Ultimately, the FERC revoked the case-by-case application requirement and decided to treat diesel cogeneration facilities like all other types of qualifying facilities. Stating that it would continue to assess the "concentration of diesel and dual-fuel qualifying cogeneration facilities as well as the pace at which such facilities are seeking qualifying status", the FERC declared that it "may restrict qualification of [such facilities] in the New York City area in the future." 46 FR 33027. EPA maintains that the FERC similarly has authority in the instant case to deny open access transmission to the extent such transmission would have adverse environmental impacts. The FERC's leadership in considering the potential environmental consequences of the cogeneration rulemaking at the beginning of the process ensured and helped to promote a more rational market and prevented environmental harm.

## B. Mitigation Principles and a Workable Proposal for FERC Implementation

We have shown that the FERC has authority to consider environmental factors in taking actions under the FPA, e.g., in setting just and reasonable rate under sections 205 and 206 of the FPA, and to base decisions on such factors. In order to meet NEPA requirements, the final EIS must include a fuller discussion of the authority of the FERC (addressing the points in section IV(A) above) and should specifically address proposed mitigation measures in light of such authority. The FERC's adoption of an appropriate mitigation mechanism to prevent emissions increases would eliminate concerns which led to EPA's rating the proposed rule as "environmentally unsatisfactory" under the Clean Air Act.

We show below that the FERC should consider, and ultimately adopt and apply, a single, uniform mitigation mechanism to all of its competition-promoting actions, starting with open access. Further, the FERC should recommend use of this same mechanism to states considering mitigation of their own actions to promote competition. Workable mitigation options are available to FERC to modify the proposed open access rule so that it secures the economic benefits of competition without pollution increases. Commenters such as the Alliance for Affordable Energy, et al., and the Center for Clean Air Policy have recommended a number of specific mitigation mechanisms which could be implemented. These approaches have merit and should be considered favorably by the FERC.

**Mitigation Principles.** The FERC should consider and adopt the following principles for approaching emissions mitigation. EPA is committed to working with the FERC to develop mitigation measures consistent with these principles.

1. The FERC has responsibility for preventing emissions increases attributable to the promotion of competition in the electric industry. It is EPA's and the states' responsibility under the Clean Air Act to meet the clean air standards. However, to ensure that the FERC's actions are not environmentally unsatisfactory, it has the responsibility, in cooperation with EPA and the states, to assure that emissions do not increase, due to the FERC's actions to promote competition, to a level above the emission levels that would have been expected absent those actions.

2. The FERC must support on-going state and regional efforts to reduce emissions. The FERC should offer support to state and regional efforts, in cooperation with EPA, to agree on and implement emission reductions necessary to meet clean air standards. An important example of such efforts is the 37-state Ozone Transport Assessment Group, which seeks to establish a program to reduce regional $NO_x$ emissions as necessary to attain the health-based NAAQS for ozone. The FERC should also support other state and regional efforts that may also take shape in the near future in other regions, e.g., the Grand Canyon Visibility Transport Commission and the Southern Appalachian Mountain Initiative.

The FERC should state that it encourages state and regional authorities to adopt mechanisms to mitigate the adverse environmental impacts of open access and other competition-promoting actions. The FERC should also state that mechanisms ensuring fair allocation of environmental costs with respect to all competitors in a given electric market are consistent with the economic goals of open access and necessary for implementation of open access consistent with environmental goals. EPA believes that FERC encouragement of up-front mitigation by states and regions will assist the development of such mitigation.

3. The FERC must establish a specific mitigation mechanism to prevent emissions from increasing due to the FERC's actions to promote competition. Offering support for state and regional efforts to reduce emissions is not, by itself, a sufficient response to the pollution increases that are likely to flow from open access transmission and other competition-promoting actions.[30] Even if the OTAG effort comes quickly to fruition, it will take considerable time before analagous programs are adopted for other pollutants from electric generation and for other regions of the country. Thus, it is essential that FERC take responsibility in the interim to adopt feasible steps within its authority to prevent emissions increases that would be triggered by competitive reforms in the electric sector. To do this, the FERC should develop a single, uniform mitigation mechanism that would be linked to each of those actions, starting with the open access rule.

4. The FERC should recommend the same mechanism to states whose own actions to promote competition would increase emissions. Many states are considering competition-promoting proposals and are concerned about emissions increases that may result from FERC actions, the actions of upwind states, and even their own actions. The FERC should recommend the

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[30] EPA notes that the DEIS contains some expressions of support for state and regional efforts: "staff believes that the appropriate role for the Commission is to support EPA (and other air quality regulators) in their efforts to seek regional solutions to interregional $NO_x$ transport problems." DEIS at 6-2. This statement, however, inappropriately dismisses any FERC responsibility for its own steps that would *aggravate* these problems. What EPA believes necessary in the final EIS and the final rule is a clear commitment by the FERC to take action that will prevent emissions increases attributable to promotion of competition. In that context, statements of support for action by the OTAG states to reduce emissions as needed to meet the health standards will take on added meaning and weight.

mitigation mechanism discussed below to states with such concerns because this offers the opportunity for adoption of a single, uniform response across the nation. This approach would best serve mitigation objectives with the greatest consistency and efficiency and the least burden.

5. The FERC should make emissions information available to the marketplace. To facilitate operation of the mitigation mechanism, the FERC should provide for making emissions information available to the power sales market place. This could be done by providing that contracts for power sales include information on the emissions of the generation source. The FERC could also provide for posting real-time emissions information on power sales electronic bulletin boards. Real-time data on emissions associated with generation could enable buyers and sellers in emerging power markets to make more informed decisions in light of existing and potential future environmental liabilities.

The DEIS acknowledges that "[t]his type of posting system may have some merit as a tool for environmental planning" and that the FERC "has jurisdiction over EBBs to the extent they may affect matters under its jurisdiction." DEIS at 6-3. The DEIS states, however, that "staff does not believe that the Commission has sufficient jurisdiction to create new environmental requirements for EBBs, i.e., require EBB operators to post emissions data on their EBB." Id. EPA believes that this statement of lack of jurisdiction is premature and inaccurate and should be revised. At a minimum, the FERC could use its authority over transmission and wholesale sales under the FPA to require posting of real-time emissions information with regard to electricity on the wholesale sales market.. The requirement to submit data regarding generation would not violate the prohibition in section 201 of the FPA against FERC jurisdiction over generation facilities. In fact, the FERC already collects information on generation costs as part of its determination of just and reasonable wholesale sales rate. See FPC v. Conway, 426 U.S. 271, 280 (1976) (holding that the Commission can examine information related to non-jurisdictional transactions when deciding whether jurisdictional rates are just and reasonable).

**A Workable Mitigation Mechanism for FERC Implementation.** A practical mitigation mechanism, such as the following, could be established by the FERC, in cooperation with EPA. EPA recognizes that there may be substantial, practical complexities in implementing such mechanisms. Additional analysis will be necessary before a specific mechanism could be implemented.

Any fossil fuel-burning generating entity seeking service under open access transmission tariffs would be required to (a) *commit* by an enforceable contractual undertaking that it will avoid or offset emissions increases (measured against appropriate baselines as discussed below), and (b) periodically *certify* its compliance with that commitment. Middlemen would have a similar obligation as addressed below.

The generator could meet its emission limits either by making verified emission reductions within its own facilities or by obtaining eligible emissions offsets from other entities. Compliance flexibility would be facilitated by emissions trading analogous to the existing $SO_2$ emission trading program.

Wherever feasible, generators would account for their emissions utilizing existing emissions monitoring information that is already reported to EPA under the Clean Air Act. Virtually all generation sources are already required to monitor and report $NO_x$ and $CO_2$ emissions under the Acid Rain Program.[31] An emissions data system could also be readily established for mercury, using either actual monitoring or fuel mercury content as a surrogate.

An important practical issue is how compliance with these "no increase" commitments would be demonstrated. EPA can envision two approaches to this issue that would provide satisfactory assurances of compliance for all parties with minimal detailed involvement by the FERC.

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[31] As stated at the beginning of these comments, because the Acid Rain Program already establishes a nationwide cap on sulfur dioxide emissions, there is no need for FERC mitigation with regard to that pollutant.

The first approach relies primarily on contract law, backed up by the FERC's authority under section 206(a).[32] The "open access" rule could require each tariff to provide that the transmission entity's contract with the generator (a) must reflect the generator's initial commitment and subsequent certifications and (b) must include or make reference to supporting documentation. EPA and affected states should be made third party beneficiaries of this contractual commitment. The required supporting documentation would be information concerning the generator's own emissions (i.e., monitoring records) or information to establish the validity of offsets (i.e., monitoring data and other pertinent information). Transmission entities would be required to deny service to generators that did not proffer the requisite commitments, certifications, or supporting documentation. In practice, a generator would have strong incentives to be in compliance in order to avoid loss of service due to questionable eligibilty. Most disputes would be resolved by the parties as matters of contract law. Complying generators could also be protected against wrongful denial of service by complaining to the FERC about violations of the tariff. This approach, which is modeled on EPA's proposed Open Market Trading Rule, 60 FR 39668 (1995), relies largely on the arms-length relationship between participants in power transactions to provide appropriate scrutiny of transactions and appropriate motivation for well-documented compliance.

Alternatively, EPA could establish a procedure whereby a generator could voluntarily subject its facilities to emission limits that are enforceable by EPA and/or state environmental authorities. Similarly, it could obtain offsets from other sources that accept more stringent enforceable emission limits. Under this approach, the generating entity could assure its eligibility for open access service by complying with such emission limits or by obtaining offsets from sources that have done so.

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[32] The Commission has authority, on its own motion or in response to a complaint, to investigate and find "any rate, charge, or classification, demanded, observed, charged, or collected . . . or any rule, regulation, practice, or contract" affecting such rates, etc., to be "unjust, unreasonable, unduly discriminatory or preferential" and to order appropriate remedies. 16 U.S.C. 824e(a).

Either of these approaches provides a practical means to handle power transactions involving middlemen (e.g., power brokers, resellers, power pools). Middlemen could meet their obligation by showing, through their contracts, that the source or sources of generation with which they are dealing have made the requisite commitments and certifications and have supplied the requisite supporting documentation. Thus, the eligibility of middlemen would depend on the status of the generators to which they were linked in the chain of contractual relationships. This would create a powerful incentive for most, if not all, generators to avoid or offset increases, since there would be a strong market preference among middlemen to deal with such generators.[33]

An important element of the mitigation mechanism is the emissions baseline above which mitigation would be required. The FERC must prevent emissions increases associated with competition-promoting reforms. In keeping with this premise, the "avoid-or-offset" obligation should run from a baseline that reflects the emissions path that would have been expected absent these reforms. For $NO_x$, the baseline would be current emissions adjusted for future air quality requirements (e.g., Phase III of the OTC's MOU and the proposed Title IV Phase II). For $CO_2$, the baseline would take into account the emissions increases that were expected under projections made to support the current reassessment of the President's Climate Change Action Plan. EPA is prepared to work with the FERC and others on an appropriate baseline for mercury.

For each of the pollutants of concern, this FERC mitigation mechanism would operate until superceded by appropriate programs addressing those pollution problems under other authority. For example, if OTAG implements a $NO_x$ allowance trading program for sources in the 37 eastern states with the cap set at a level sufficient to meet the health-based NAAQS for ozone, the FERC's mechanism would be superceded with regard to $NO_x$ emissions in these states. The FERC mitigation mechanism would remain in effect for $NO_x$ sources outside of these states.

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[33] With respect to $NO_X$ sources subject to a regional $NO_X$ cap (e.g., sources within the Ozone Transport Region, beginning in 1999) would be deemed to be meeting their $NO_X$ obligation under the FERC mitigation mechanism. Sources upwind of the OTR region could "opt in" to the region's $NO_X$ budget as a means of making their "avoid or offset" showing.

### C. Future Proceedings on Mitigation Issues

Many commenters have expressed strong objections to the FERC's issuing the final open access rule without mitigation provisions to prevent emissions increases. EPA shares their view that the rule must provide for mitigation. EPA offers the following proposal for the FERC to proceed.

The FERC should include in the final open access rule (a) its conclusion that the rule and other actions to promote competition must not allow emissions increases and (b) propose an enforceable mitigation mechanism that will achieve that goal; with an expedited schedule for action within six months. .

EPA commits to work with the FERC to elaborate the above-described proposal and, at the same time, to take necessary steps to use its own regulatory authority to mitigate adverse environmental impacts.

## V. SUMMARY AND CONCLUSION

EPA supports the timely implementation of open access. Although there are deficiencies in the DEIS and that the rule is likely to have adverse environmental impacts, we believe these concerns can be addressed without delaying its implementation, if the FERC will do so meaningfully..

The proposed open access rule, as presently structured, would lead to significant increases in three pollutants that are of primary concern to EPA: $NO_X$, mercury, and $CO_2$. The projected increases in $NO_X$ emissions attributed to the proposed open access rule will adversely impact air quality in places where the air is already unhealthy. With respect to $CO_2$, the DEIS forecasts significantly higher emission levels than those published in connection with the Administration's climate policy. Reported mercury emissions appear to be in error and cannot be evaluated from the DEIS in their current form.

The final EIS must acknowledge the possibility that economic and environmental effects of the rule could be significantly larger than predicted. The FERC should therefore consider mitigation options with sufficient flexibility to address whatever adverse environmental impacts ultimately result from the rule.

With regard to NEPA, the DEIS fails to meet requirements of Council on Environmental Quality regulations in several respects. The DEIS treats case-by-case implementation of open access as the "no action" baseline and fails to examine a scenario that assumes no further action by the FERC to implement open access. The DEIS makes overly restrictive assumptions about transmission capability and fails to consider a scenario where transmission constraints are relaxed as a result of the rule's incentives for investments in transmission. The DEIS compares each of the two competitive scenarios in which generator performance changes to only one base case, not to both; this approach probably understates differences between the base cases and the rule scenarios. Water and fisheries impacts are not adequately addressed in the DEIS. The manner in which regional data are reported may obscure the magnitude of $NO_X$ emission increases in the critical Ohio Valley region. Finally, the DEIS fails to explain a discrepancy between its $CO_2$ emission estimates and other official estimates.

The DEIS sets out a falsely restrictive view of the FERC's statutory authority to adopt measures for mitigating adverse environmental impacts of the proposed rule and discourages state efforts to mitigate.. There are mitigation measures that the FERC has the authority to implement. The FERC bears responsibility for preventing emissions increases related to its actions promoting competition in electricity markets and must therefore support specific mitigation mechanisms.

EPA looks forward to working with the FERC to carry out this important duty.

Comments on Draft Environmental Impact Statement
corrected copy, February 21, 1996
February 21, 1996

Richard E. Sanderson
Director
Office of Federal Activities

## MITIGATION STRATEGIES THAT WOULD BE EFFECTIVE CONCURRENTLY WITH THE RULE

Question: Are there mitigation strategies that could be adopted by the Agency that would be effective concurrently with the rule to assure no increase of oxides of nitrogen, fine particles, ozone, toxics and carbon dioxide? Please identify these strategies.

Answer: As EPA explained in its May 13, 1996 letter in which we referred the FERC's open access rule to CEQ, EPA is currently working with the 37 eastern-most States through the Ozone Transport Assessment Group (OTAG)to bring the best available science to the long-distance transport problem and to reach consensus among these states on measures needed to reduce emissions to meet ozone standards. At this time, EPA believes that a region-wide cap-and-trade program is the best method for achieving the needed reductions. EPA will use its authority under Title I of the Clean Air Act to support successful completion of the OTAG process. In the event that the OTAG states do not reach an agreement on a control strategy by the end of this year, EPA is prepared to establish a $NO_x$ cap-and-trade program for the 37-state OTAG region, through Federal Implementation Plans if it is necessary because some states are unable or unwilling to act. Because the implementation of such a solution may take time, EPA may need to call upon other federal agencies, such as FERC, to take actions to support this effort. A copy of EPA's May 13 letter to CEQ is attached.

With regard to all of the air pollutants cited above, EPA, in conjunction with the Department of Energy, plans to establish a system for monitoring changes in emissions which might result from open access policies and we will take appropriate action consistent with our authority under the Clean Air Act.

As noted above, on May 29, 1996, FERC agreed to play a back-stop role, if necessary, by initiating an inquiry and a possible rulemaking with regard to mitigation strategies. On June 14, 1996, the Council on Environmental Quality wrote to EPA to convey the strong support of the Clinton Administration for implementation of the Clean Air Act (as described in the following answer) to safeguard against any potential emissions increases, as well as to reduce long-distance transport of emissions as needed to meet the public health standard for ozone smog in downwind areas. Based on these actions and the FERC's commitment to the back-up steps discussed above, CEQ concluded that the referral had been successfully resolved. A copy of the CEQ letter is attached.

## STATEMENT BY KATHLEEN A. McGINTY

Today I announced the successful resolution of the Environmental Protection Agency's referral of the Federal Energy Regulatory Commission open access rule to the Council on Environmental Quality. As a result of this review, Americans will enjoy both cleaner air and up to $5.4 billion a year in lower energy bills.

In response to the EPA referral, FERC made important commitments to future actions to protect clean air. When combined with the Administration's efforts to achieve clean air through cooperation with the states and under the authorities of the Clean Air Act, these commitments will provide the environmental safeguards that people want and deserve. The Administration will also pursue the use of innovative approaches such as emission cap-and-trade programs in achieving these goals.

The successful resolution of this referral shows the value of the National Environmental Policy Act in bringing together federal agencies and the public in order to make sensible decisions about environmental protection.

* * *

Note: Ms. McGinty made the determination earlier today with a letter to EPA Administrator Carol M. Browner and FERC Chair Elizabeth A. Moler. The letter is attached.

June 14, 1996

The Honorable Carol M. Browner
Administrator
Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

The Honorable Elizabeth A. Moler
Chair
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Dear Administrator Browner and Chair Moler:

I am writing to you concerning the May 13, 1996, referral by the Environmental Protection Agency (EPA) of the Federal Energy Regulatory Commission (FERC) Order No. 888, "Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities and Recovery of Stranded Costs by Public Utilities and Transmitting Utilities." The Council on Environmental Quality (CEQ) has concluded that the referral process and corresponding responses to the referral from FERC and other agencies have successfully resolved the disagreements between EPA and the FERC. As a result, the Administration will be able to provide the economic benefits of competition in wholesale electricity markets while protecting, and indeed enhancing, air quality. A detailed analysis of the referral and the CEQ conclusions are included in the attached document.

As you are aware, the FERC is promoting competition in the electric utility industry through a rule that will facilitate open access to wholesale transmission services (Order No. 888). As part of this rulemaking, the FERC prepared an Environmental Impact Statement (EIS) pursuant to the FERC's National Environmental Policy Act (NEPA) regulations and the CEQ regulations implementing NEPA. The notice of the availability of the final EIS was published in the Federal Register on April 19, 1996, and the FERC approved the final rule on open access on April 24, 1996.

The Clinton Administration has a broad interest in successful implementation of clean air policies concerning a range of air pollutants, including nitrogen oxides (NOx), particulates, toxics, and greenhouse gases, whether or not they are related to the open access rule. To that end, the Administration is already involved in a number of efforts to address these contaminants in ways that will achieve the necessary level of reductions in emissions and ensure a clean and healthy environment.

Because EPA was concerned about future potential increases in air pollutants as a result of the open access rule, on May 13, 1996, EPA referred the rule to CEQ pursuant to section 309 of the Clean Air Act (CAA) and the CEQ regulations at 40 C.F.R. Part 1504. Since EPA felt that there was no immediate threat to air quality from the rule, EPA judiciously took the position that the rule should proceed at this time while mitigating actions were undertaken. EPA also noted a set of actions which would mitigate their concerns, including actions by EPA under the CAA, by states cooperatively working together and with the EPA, and by the FERC through a commitment to take certain actions if necessary to combat air pollution. In addition, EPA performed significant analysis of both the FERC EIS and the model used for the EIS.

On May 29, 1996, FERC responded to the EPA referral by committing to take those actions that were requested by EPA should the conditions outlined by EPA occur. Specifically, FERC agreed to a Notice of Inquiry to revisit mitigation issues and to propose a rulemaking under the Federal Power Act, if future circumstances warrant. The EPA and the Department of Energy (DOE) have commented favorably on the FERC response.

CEQ has reached five major conclusions regarding the referral of the open access rule and its resolution:

(1) THE FERC OPEN ACCESS RULE SHOULD PROCEED -- The FERC rule will yield significant economic savings to citizens and industry across the country of up to $5.4 billion a year. At the same time, the rule presents no immediate threat to air quality. Indeed, as EPA noted under some scenarios the rule could help reduce air pollution in the future. Based on the specific circumstances in this situation, EPA's position that the rule should proceed without delay was appropriate.

(2) SIGNIFICANT MITIGATION ACTIONS SHOULD BE TAKEN AS THE FERC RULE PROCEEDS -- EPA's concern about potential future increases in air pollution, which was the basis for the referral to CEQ, is an issue that deserves serious consideration. EPA outlined a set of sensible actions to ensure there are adequate protections against any potential increases due to the rule, and, indeed, to obtain the emission reductions needed to meet the CAA public health standard for ozone. The actions include support for the state Ozone Transport Assessment Group (OTAG), EPA's use of its own CAA authorities such as amendments to State Implementation Plans (SIPs) and issuance of Federal Implementation Plans (FIPs), and a commitment from the FERC to take certain actions if OTAG fails. Furthermore, cap-and-trade proposals will be considered as part of the OTAG process, and EPA is initiating discussions about an interim cap-and-trade program to operate in the meanwhile. The Clinton Administration strongly supports the approach to ensuring clean air quality outlined by EPA.

(3) FERC HAS AGREED TO PLAY AN IMPORTANT ROLE IN THE MITIGATION PLAN -- On May 29, 1996, FERC issued an order committing to initiate a Notice of Inquiry into appropriate mitigation for FERC if OTAG does not succeed, and to propose a rulemaking on possible mitigation under the Federal Power Act contemporaneously with EPA issuance of FIPs. This commitment provides an important backstop to the OTAG process and will reinforce actions under the CAA.

(4) THE DEPARTMENT OF ENERGY (DOE) WILL ALSO PLAY AN IMPORTANT ROLE IN THE MITIGATION PLAN -- DOE also committed to support EPA's efforts to address mitigation of possible adverse effects, including by helping to set up a tracking system to monitor emission changes resulting from open access. DOE also concurred that FERC's commitment in response to EPA would usefully augment EPA's efforts. Furthermore, DOE noted that it has programs to promote energy efficiency and clean sources of energy that could achieve significant additional reductions in emissions of air pollution if these programs are fully supported by Congress.

(5) NEPA HAS WORKED WELL IN THE CASE OF THE OPEN ACCESS RULE -- Finally, the NEPA process worked successfully in this case to prompt an agreement among agencies on how best to reconcile energy and environmental policy objectives. To implement the broad policies set forth in the statute, NEPA requires Federal agencies to consider the environmental, social, and economic effects of their proposed actions. NEPA does not dictate a particular result, but the NEPA process ensures that agencies make more informed decisions. In this process, while fully respecting the independence of the FERC, a result was achieved that reflects strong progress in realizing cost savings to consumers while ensuring clean and healthy air.

The FERC rule on open access is expected to produce substantial savings to consumers due to increased competition in the wholesale electricity market, and, as a result of the referral process, we now have a clearly defined set of policy measures that will safeguard and indeed enhance air quality throughout the United States. CEQ will continue to monitor progress on this issue in order to ensure compliance with NEPA and the CAA.

I would like to thank the participants in this process for their willingness to work together so seriously and would like to commend them for their commitment to the public interest. If you have any additional questions regarding the resolution of this referral, please feel free to contact me or my staff.

Sincerely,

Kathleen A. McGinty
Chair

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EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL ON ENVIRONMENTAL QUALITY
WASHINGTON, D.C. 20503

## ANALYSIS OF MAY 13, 1996 ENVIRONMENTAL PROTECTION AGENCY REFERRAL TO THE COUNCIL ON ENVIRONMENTAL QUALITY OF THE FINAL RULE PROMULGATED BY THE FEDERAL ENERGY REGULATORY COMMISSION ORDER NO. 888, "PROMOTING WHOLESALE COMPETITION THROUGH OPEN ACCESS NON-DISCRIMINATORY TRANSMISSION SERVICES BY PUBLIC UTILITIES; RECOVERY OF STRANDED COSTS BY PUBLIC UTILITIES AND TRANSMITTING UTILITIES"

(JUNE 14, 1996)

On May 13, 1996, the Administrator of the Environmental Protection Agency (EPA) submitted to the Council on Environmental Quality (CEQ) a referral of the final rule promulgated by the Federal Energy Regulatory Commission's (FERC) Order No. 888, "Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities and Recovery of Stranded Costs by Public Utilities and Transmitting Utilities" ("open access rule"). The referral was based primarily on EPA's concerns that under certain circumstances the open access rule could lead to increases in air pollution in the future that would have impacts which are unsatisfactory from the standpoint of public health or welfare or environmental quality. For the reasons set forth in more detail below, CEQ concludes that the referral and corresponding responses to the referral from FERC and other agencies have successfully addressed and resolved the disagreements between EPA and the FERC.

As the agency charged with coordinating interagency implementation of environmental law and policy, one of CEQ's key roles is mediating interagency disagreements over such matters. The CEQ regulations implementing the environmental impact assessment provisions of the National Environmental Policy Act (NEPA) set forth a formal referral process for resolving federal agency disputes when there are "interagency disagreements concerning proposed major federal actions that might cause unsatisfactory environmental effects."[1] Referrals should be made to CEQ "only after concerted, timely (as early as possible in the process), but unsuccessful attempts to resolve differences with the lead agency."[2]

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[1] 40 C.F.R. §§ 1504.1-1504.3.

[2] 40 C.F.R. § 1504.2.

Section 309 of the Clean Air Act (CAA) directs the Administrator of the EPA to review and comment publicly on the environmental impacts of federal activities, including proposed regulations. If, upon review, the Administrator determines that the matter is "unsatisfactory from the standpoint of public health or welfare or environmental quality," the Administrator is directed to refer it to the Council on Environmental Quality.[3]

To make a referral, the agency (in this case EPA) must deliver a letter to CEQ within 25 days of EPA's publication of the notice of availability of the final EIS, outlining, among other things, why the matter is environmentally unsatisfactory, and any mitigation alternative, further studies, or other courses of action which may be taken to remedy the situation.[4] Factors an agency should consider in determining whether to refer a matter to CEQ include: a violation of environmental standards or policies; severity, duration, or geographical scope of impacts; precedential importance; and/or whether environmentally preferable alternatives are available.

Not later than 25 days after the referral to CEQ, the lead agency (in this case FERC) may deliver a response to CEQ and the referring agency. This response shall address fully the issues raised, provide a response to the referring agency's recommendations, and be supported by evidence.[5] Not later than 25 days after receiving this response, CEQ may take one or more actions, including: (1) mediate between the agencies; (2) conclude the process of referral and response successfully resolved the problem; and/or (3) publish advisory findings and recommendations on the merits of the issues raised by the agencies involved.[6]

On July 18, 1995, FERC published a notice of intent to prepare an environmental impact statement (EIS) for the proposed open access rule. The rule, which was promulgated pursuant to the Federal Power Act (FPA), seeks to increase access to non-discriminatory transmission services and thereby increase competition in wholesale power markets. It requires public utilities that own, control or operate facilities used for transmitting electric energy in interstate commerce to have on file open access transmission tariffs providing for non-discriminatory service. It also permits public utilities and transmitting utilities to seek recovery of legitimate, prudent and verifiable stranded costs associated with providing open access and transmission services.

By promoting greater competition in the electric utility industry, FERC expects the open access rule to generate up to $5.4 billion a year in savings on the electricity costs to consumers nationwide. Additional economic activity could also occur in those regions that supply more competitive electricity generation. In a letter to CEQ commenting on the open access issue, Joseph Stiglitz, chairman of the Council of Economic Advisors, observed that increased competition in electricity "will deliver substantial benefits to American consumers and businesses, and these benefits need not and should not come at the expense of environmental degradation."[7]

The draft EIS (DEIS) for the open access rule was issued on November, 17, 1995. Under its section 309 authority, EPA on February 20, 1996 issued in writing its review and comments on the

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[3] 42 U.S.C. § 7609(b).

[4] 40 C.F.R. § 1504.3(c)(2)(vi).

[5] 40 C.F.R. § 1504.3(d).

[6] 40 C.F.R. §§ 1504.3(f)(1)-(7).

[7] Letter from Joseph Stiglitz, Chairman, Council of Economic Advisors, to Kathleen A. McGinty, Chair, CEQ (June 13, 1996).

DEIS, in which it requested FERC staff to perform additional specific analyses. FERC complied with this request, as acknowledged by EPA in a subsequent letter summarizing its review of the final EIS (FEIS).[8] On April 19, 1996, EPA published a notice of availability of the FEIS in the Federal Register. The FEIS maintained, among other things, that the proposed rule would have only a slight impact on emissions of nitrogen oxides (NOx) and other air pollutants.

On May 13, 1996, EPA referred the FERC open access rule to CEQ, noting that the rule was unlikely to have "any significant adverse environmental impact in the immediate future," but also stating that under certain circumstances the rule "could lead to increases in air pollution in the future.".[9] EPA weighed the relevant factors articulated in its referral and proposed that the FERC rule be allowed to proceed without delay, but that a set of actions to address future potential emissions be undertaken by the states, EPA, and the FERC.[10]

The Clinton Administration has a broad interest in successful implementation of clean air policies concerning a range of air pollutants, including NOx, particulates, toxics, and greenhouse gases. To that end, the Administration is already involved in a number of efforts to address these contaminants in ways that will achieve the necessary level of reductions in emissions and ensure a clean and healthy environment.

Certain states have raised concerns about the emission of a range of pollutants from the utility sector in addition to NOx as a result of the open access rule.[11] Currently, EPA is exploring approaches to address these multiple pollutants cost-effectively through its "Clean Air Power Initiative," conducted in collaboration with stakeholders from industry, the states, and public interest organizations. In addition, with respect to greenhouse gases the Administration is implementing the Climate Change Action Plan and is committed to developing post-2000 targets, timetables, and policies through international negotiations now underway.

A critical part of the process to achieve healthy air for all Americans is EPA's effort to bring air quality regions into compliance with the ambient air quality standard for ozone. EPA has involved many participants in this process including other parts of the Federal government, states, private industry, labor, and public interest organizations. The success of this effort requires participants to address the issue of long-range transport of NOx, which contributes to ozone formation.

The set of actions proposed by EPA in its referral included a combination of actions by states and EPA under the CAA and a commitment by FERC to take additional actions under its own authorities if those actions were necessary. EPA also stated its intention to establish a tracking system to monitor developments under the rule, drawing on available information and expertise from DOE and FERC. CEQ believes that EPA's proposals provide a sensible approach for addressing potential emission increases.

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[8] Letter from Mary D. Nichols, Assistant Administrator for Air and Radiation, EPA, to Kathleen A. McGinty, Chair, CEQ (May 22, 1996).

[9] Letter from Carol Browner, Administrator, EPA, to Kathleen McGinty, Chair, CEQ (May 13, 1996).

[10] FERC's open access rule was published in proposed form on April 7, 1995, and adopted by the Commission on April 24, 1996.

[11] "Ensuring Cleaner Air from Electric Utility Restructuring: Recommendations to the Clinton Administration," by the New England Governor's Council Environment Committee (June 11, 1996).

Future potential increases in transported NOx, either in general or as a result of the open access rule, can be addressed successfully if states (working with the EPA) prevent sources within their borders from contributing to violations of the ozone standard in downwind states. Accordingly, EPA is working with the 37 eastern-most states through the Ozone Transport Assessment Group (OTAG) to reach consensus on measures needed to reduce emissions to meet the public health standard for ozone and to use the best available science to help understand the scope of NOx transport. If the OTAG process succeeds, it will address not only potential increases in emissions from the open access rule, but also currently existing levels of emissions that need to be reduced.

If OTAG does not succeed in reaching a consensus on reducing transport of NOx, EPA will use its CAA authorities to address the issue. As noted in EPA's referral letter, pursuant to Title I of the CAA, states that do not currently meet the ozone standard are already under a legal obligation to adopt additional pollution controls and to amend their State Implementation Plans (SIPs) as necessary by mid-1997. In addition, EPA stated that it will notify upwind states that they will need to amend their SIPs to adopt control measures necessary to prevent contribution to ozone violations in downwind states. Finally, EPA has stated its readiness to establish a pollution control program for the transport of NOx through Federal Implementation Plans (FIPs) if relevant states are unable or unwilling to act in a timely manner.

The Clinton Administration strongly supports the OTAG process and believes that the best solution to NOx transport would be one in which an agreement is achieved cooperatively among the states and with EPA. OTAG has already begun to use the expertise of the states to look at issues of science to model transport, examine the potential for a cap-and-trade system, and many other issues. The Administration is in no way prejudging the outcome of the OTAG process. Nevertheless, the Administration does believe that such a process puts the knowledgeable perspective of states to use most effectively and therefore has great potential for producing the most desirable outcome.

Furthermore, an OTAG agreement that included a regional cap-and-trade system would be the best approach overall since it would provide environmental certainty while incorporating market mechanisms to achieve needed emission reductions at the lowest cost. CEQ believes that it is very encouraging that EPA has also committed to initiate a discussion this summer to explore with states and other stakeholders the implementation of an interim cap-and-trade program prior to the completion of the OTAG process.

However, if the OTAG process does not succeed, the Administration would be obligated under the CAA to proceed to use existing authorities to seek emission controls on the transport of NOx, based on the best available science. Such a response would be necessary given the importance of protection of public health and equity among states.

In the event that OTAG does not produce the necessary pollution limitations in a timely manner, EPA also requested that the FERC commit to contribute to this effort. Specifically EPA requested, if it proves to be necessary, that FERC initiate an inquiry to examine further mitigation strategies for air pollution increases attributable to its rule and initiate a rulemaking under the FPA to propose possible mitigation of those increases.

In addition, EPA conducted a review of the FERC's final EIS which it completed on May 22, 1996. In this review, the EPA noted that "there can be differences among reasonable analysts concerning the assumptions used in such an analysis" but concluded that "FERC has conducted an adequate analysis under the National

Environmental Policy Act."[12] However, EPA also noted that its alternative assumptions would lead to projections of greater potential emissions of NOx and other air pollutants in future years than those projected by FERC under its assumptions, even though significant emission increases immediately were unlikely.

On May 29, 1996, FERC formally responded to EPA's referral by issuing its "Order Responding to Referral to Council on Environmental Quality."[13] CEQ also received comments from other key federal agencies involved in this matter, including the Department of Energy. Several comment letters were also submitted to CEQ from states and non-governmental entities.

In its response, FERC acknowledged that "reasonable minds may differ over appropriate assumptions for analysis" in the FEIS, but FERC maintained that its own assumptions were the appropriate ones to use. At the same time, FERC agreed to commit to initiate a Notice of Inquiry (NOI) to examine NOx mitigation under the FPA in the event that the OTAG process does not succeed. Furthermore, FERC agreed under those circumstances to initiate a proposed rulemaking to propose possible and appropriate mitigation under the FPA contemporaneous with EPA undertaking FIPs.

CEQ believes that FERC's Order was fully responsive to EPA's concerns and requests. Furthermore, the Commission, its staff and Chair Elizabeth Moler were, in a manner consistent with their own procedures and requirements, open in their communications with Executive Branch agencies and forthcoming with necessary information throughout this process. In light of this, CEQ believes that FERC's statement in its May 29 Order that, as an independent regulatory agency, it cannot be bound by the decisions of CEQ, is extraneous and unnecessary. CEQ is sensitive to FERC's need to retain its independence from Executive Branch agencies, and respected that independence throughout this process. The referral process is an effective tool here, nevertheless. In fact, FERC's willing participation in this process was critical to ensuring that a successful resolution of agency disagreements and thereby in helping facilitate implementation of the open access rule.

EPA concurs that the FERC order was responsive to its concerns and concluded on May 29 that FERC's commitment signals "that both the Administration and FERC as an independent agency share the same resolve to achieve both the economic benefits of competition and the health benefits of clear air."[14] The DOE has also commented favorably on the response of the FERC to the referral. DOE concluded that the FERC's commitment "will usefully augment the Administration approach by providing further assurance that the open access rule will not result in any adverse environmental impacts."[15]

In addition, DOE committed its backing to Administration efforts to support OTAG or resort to CAA authorities if necessary to protect air quality. DOE also offered its active support both for tracking utility emissions attributable to the open access transmission rule and for EPA efforts to promulgate final Phase II NOx emission limitations pursuant to section 407 of the CAA. Finally, DOE noted that it is already undertaking a range of programs to promote renewable energy and energy efficiency which, if fully supported by Congress could reduce NOx emissions by as much as 1.3 million tons a year by the year 2010.

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[12] Letter from Mary D. Nichols to Kathleen A. McGinty (May 22, 1996).

[13] Order Responding to Referral to Council on Environmental Quality, Docket Nos. RM95-8-000 and RM94-7-001.

[14] "EPA Response to FERC Order on Open Access and the Environment" (May 29, 1996).

[15] Letter from Hazel O'Leary, Secretary of Energy, to Kathleen McGinty, Chair, CEQ (June 3, 1996).

After considering the facts and supporting documentation in this case, CEQ concludes that the referral process and subsequent responses have successfully resolved the concerns raised in EPA's May 13 referral.[16] This decision is based on the agreement that EPA will work with states to seek a successful conclusion to the OTAG process, but will use its Clean Air Act authorities if it does not succeed. Also, if OTAG does not succeed, the FERC has committed to issue an NOI and a proposed rulemaking under the FPA, if necessary. Finally, DOE has agreed to take several actions supporting the Administration's clean air objectives.

CEQ believes there are no longer any substantive disagreements between EPA and FERC, and that EPA's requests and concerns, as originally articulated in its May 13 referral, have been fully addressed and resolved. Accordingly, CEQ considers this referral process concluded. However, CEQ will continue to monitor progress towards these Administration clean air goals to ensure compliance with NEPA and the Clean Air Act.

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[16] 40 C.F.R. § 1504.3(f)(1).

AGENCY DETERMINATION ON FERC's EIS

Question: Has the Agency made a determination on the adequacy of the Commission's environmental impact statement on the open access rule? If not, when will such a determination be made?

Answer: The question of the adequacy of the FEIS is addressed in EPA's letter to CEQ of May 13, 1996 and our Technical Analysis of May 22, 1996 (attached).

## LETTER FROM CAROL M. BROWNER, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY

MAY 13 1996

Kathleen A. McGinty
Chair of the Council on
 Environmental Quality
Old Executive Office Building
Room 360
17th and Pennsylvania Avenue
Washington, DC 20500

Dear Ms. McGinty:

Pursuant to Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) has reviewed Order No. 888 providing for open transmission access, proposed by the Federal Energy Regulatory Commission (FERC) on March 29, 1995, and adopted on April 24, 1996. EPA believes the open access rule will play a key role in making electricity markets more competitive, encouraging greater efficiency in electric power production, and reducing electricity costs for American consumers.

EPA has determined that the open access rule is unlikely to have any significant adverse environmental impact in the immediate future, and that in light of its anticipated economic benefits, implementation of the rule should go forward without delay. EPA has also determined, however, that under certain circumstances discussed below, the open access rule could lead to increases in air pollution in the future that would have impacts which are unsatisfactory from the standpoint of public health or welfare or environmental quality.[1] Consequently, as required by Section 309(b) of the Clean Air Act, EPA hereby refers the open access rule to the Council on Environmental Quality (CEQ). In EPA's view, these potential future impacts can be addressed through a combination of actions by EPA and States under the Clean Air Act and, if those actions are unsuccessful, further actions by FERC under its authorities. The reasons for the referral and suggested steps to address potential pollution increases are discussed below.[2]

Substantial concerns have been raised that the open access rule could in some circumstances cause significant increases in air pollution, both nationally and in particular regions.

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[1] EPA is conducting a review of the modeling conducted by FERC in the FEIS. EPA expects to complete and release this review shortly. The review will be available to FERC for consideration in shaping its response to this referral.

[2] EPA raised these concerns in comments on FERC's proposed open access rule on August 7, 1995, and in comments on the draft environmental impact statement on February 21, 1996.

FERC's Final Environmental Impact Statement (FEIS) represents a substantial effort to examine these concerns. The FEIS correctly indicates that the air pollution impacts of open access will depend on the interaction of fuel prices, technological developments, and decisions taken by businesses and regulatory bodies. In some scenarios presented in the FEIS, the rule could lead to emission levels below those otherwise expected. In that case, the American people will receive both the economic benefits of competition and cleaner air, and there would be no need for further FERC action.

In other scenarios, however, the FEIS acknowledges that the rule could cause emissions to be higher than otherwise expected in future years, and this referral is addressed to those circumstances. In EPA's judgment, the FEIS provides a reasonable basis for concluding that there are not likely to be any significant immediate adverse impacts from the rule. On the other hand, EPA believes that safeguards are needed for the longer term to make sure that open access achieves the economic benefits of competition without increases in pollution.

Potential future increases in emissions of oxides of nitrogen (NOx) due to open access are a matter of serious national importance because they would exacerbate a significant existing national pollution problem that needs to be comprehensively addressed. NOx emissions must be substantially reduced in broad areas of the country in order to meet the national public health protection standard for ozone in downwind States where that standard is currently violated. Current NOx emissions in the eastern half of the United States from electric power plants are approximately three million tons during the summer ozone season. EPA believes that based on the best available scientific information, it will be necessary to reduce these NOx emissions to below one million tons during the ozone season, in order to prevent violations of the ozone health standard in downwind areas in the Northeast and Upper Midwest. Any NOx increases resulting from open access in future years would exacerbate the difficulty of accomplishing the needed reductions.

Potential NOx increases associated with open access will be avoided if the States, working with EPA, successfully carry out their obligations under the Clean Air Act to address long-distance transport of NOx emissions and prevent sources within their borders from contributing to violations of the ozone health standard in downwind States. EPA is currently working with the 37 eastern-most States through the Ozone Transport Assessment Group (OTAG) to bring the best available science to bear on understanding the scope of the long-distance transport problem, and to reach a consensus among the States on measures needed to reduce emissions to meet the public health standard for ozone. Among the measures under active study is a region-wide "cap-and-trade" program for NOx emissions, with reductions from utility sources in the range of 55 to 85% below 1990 levels. The cap would assure the necessary overall pollution reduction, while emission trading would enable sources to reduce the costs of making these reductions, as has been done successfully with $SO_2$

emissions in the acid rain program created by Title IV of the 1990 Clean Air Act Amendments. EPA believes that a region-wide cap-and-trade program of this kind is the best method for achieving the needed reductions.

EPA will use its authority under Title I of the Act to support successful completion of the OTAG process. Those OTAG States which currently do not meet the ozone standard are already under a legal obligation to adopt necessary additional pollution controls and to amend their "State Implementation Plans" (SIPs) by mid-1997. As a further step, EPA will notify the upwind OTAG States that they also need to amend their SIPs and to adopt control measures necessary to prevent contribution to ozone violations in downwind States. While EPA has every expectation that all of the OTAG States will succeed in reaching agreement this year on the needed control strategy, EPA is prepared to establish a NOx cap-and-trade program for the OTAG region through "Federal Implementation Plans" (FIPs) if some States are unable or unwilling to act in a timely manner.

EPA will also initiate a discussion with States and other stakeholders this summer on the desirability and feasibility of implementing an interim cap-and-trade program in order to assure achievement of the full benefits of Federal and State NOx emission measures that are already in place or will become effective over the next several years. These NOx measures generally limit emission rates, not the total tonnage of emissions, and they do not take full advantage of emissions trading. EPA will explore means of converting these limits into an interim cap-and-trade program.

EPA believes the OTAG and Clean Air Act processes, if successful, should mitigate any shifts in NOx emissions that may occur as electric generators and their customers move forward under the open access rule and related measures to increase competition and promote more efficient markets in electricity.

EPA must be concerned, however, about the potential occurrence of future NOx emissions increases in the absence of timely establishment of a NOx cap-and-trade program under the Clean Air Act. Under those circumstances the open access rule would contribute to ozone standard violations in downwind areas. EPA has determined under Section 309 of the Clean Air Act that the open access rule would, under these circumstances, have environmentally unsatisfactory impacts.

If the OTAG and Clean Air Act processes fail to produce the necessary pollution limitations in a timely manner, EPA will call upon all other interested Federal agencies to assist in solving the problem. In this context, FERC could contribute to this effort. As an initial matter, FERC could agree to open an inquiry to further examine issues of mitigation strategies for NOx increases attributable to the open access rule in the event that the OTAG process does not succeed. FERC could also agree to initiate a rulemaking to propose suitable means under the Federal Power Act of mitigating those increases if it became necessary for EPA to propose FIPs under the Clean Air Act. Commitment to take these steps would be an effective signal that the

Administration and FERC share the same resolve to achieve both the economic benefits of competition and the health benefits of clean air.

EPA believes that if FERC made commitments to take these actions if needed, the combination of actions by EPA and States under the Clean Air Act and back-up actions by FERC under its authorities would effectively safeguard against potential adverse environmental impacts due to NOx increases in both the long term as well as the immediate future.

In order to monitor developments under the rule, EPA intends to draw on available information and expertise from the Department of Energy (DOE) and FERC to establish a tracking system combining available information on emissions, capacity utilization, wholesale electricity sales, and other factors. EPA, DOE, and FERC should consult to develop appropriate means to identify effects on emissions attributable to the open access rule.

The potential for future increases in emissions of carbon dioxide ($CO_2$) and other pollutants in some open access scenarios is also a matter of concern. Increases in $CO_2$ would exacerbate the difficulty of carrying out the Administration's commitment to reducing emissions of greenhouse gases under the President's Climate Change Action Plan and the Framework Convention on Climate Change. The Administration is committed to develop appropriate post-2000 targets, timetables and policies under the Framework Convention on Climate Change. EPA is also ready to work with DOE and utilities to enhance existing voluntary commitments on $CO_2$ as a safeguard against emissions increases associated with open access.[3]

The steps EPA is taking under the Clean Air Act, combined with those that could be taken by FERC in response to this referral as suggested above, would permit us to achieve both the economic benefits of competition in the electric sector, and timely attainment of healthy air for all Americans. In short, in this way the Administration can assure the American people the benefits of both competition and clean air.

Sincerely,

Carol M. Browner

Carol M. Browner

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[3] $CO_2$ could also be covered by the tracking system suggested above. Measurements or estimates of mercury emissions could also be integrated into such a tracking system.

### RELEASE OF DRAFT REPORT ON MERCURY

Question: The air pollution from coal-fired powerplants includes mercury, cadmium, vanadium and many other poisonous heavy metals. Because of Congressional concern about powerplant emissions and about the effects of other sources of mercury pollution, the 1990 amendments to the Clean Air Act required three studies. Two were to be conducted by EPA and the third by the National Institute of Environmental Health Sciences.

One of two EPA studies is to focus specifically on -- and I quote -- "hazards to public health reasonably to be anticipated to occur as a result of emissions of electric utility steam generating units." Another of the studies is to report on -- and again I quote -- "mercury emissions from electric utility steam generating units... (considering) the health and environmental effects of such emissions."

There are reports that the decline of red spruce in Vermont and other Eastern states is linked to powerplant emissions. Earlier this month, a study published in the scientific journal *Nature* specifically implicated heavy metals. My understanding is that because it was due to be submitted to Congress in December, a draft of the report on mercury has been completed, but the findings are not being shared with the public. Will you make the draft report on mercury available so that it can be reviewed by state officials, the Congress and others?

Answer: Release of the draft mercury report has been delayed to await new human health data. Without this health information, the assessment of risk to public health in the report is considered incomplete. The current draft is being reviewed by EPA's Science Advisory Board (SAB). Because the activities of the SAB are public processes subject to the Federal Advisory Committee Act, the charge to the SAB and the materials being reviewed by the SAB are available to the public. The whole review draft report is available on the National Technical Information service (1-800-553-NTIS), Doc. # PB96-184619.

## QUESTIONS SUBMITTED BY SENATOR JOHNSTON

### MERCURY STUDY REPORT TO CONGRESS

Question: In April 1996, the EPA notified Congress that the mercury report, which is mandated by the Clean Air Act, would be delayed for approximately two years in order to incorporate more comprehensive data and sound science. In an April 4, 1996 letter to the Sierra Club, the EPA stated, "(b)ecause of the need to review and incorporate important new data, I have concluded that the agency should not issue the report as had been previously planned." The letter also states that "(t)hese studies will permit a far more definitive estimate of the level of mercury consumption that is without effect on children." The EPA also indicated its desire to utilize its Science Advisory Board (SAB) in a further attempt to achieve sound science through peer review.

1). The EPA stated that new data would help to make the mercury report more complete and definitive. Can I surmise that this report would be incomplete and not scientifically viable if it were to be released without incorporating this new information?

Answer: The Clean Air Act requires the EPA to submit a comprehensive report to Congress on mercury. The report is to consider sources of mercury emissions, the public health and environmental impacts of such emissions, technologies available to control such emissions and the costs of such control. The new data that are forthcoming pertain solely to public health, in particular what level of mercury exposure that is without effect on children. Without this information, the characterization of risk to public health in the report is incomplete. Therefore, by waiting for the new health data, the revised mercury report to be issued in 1999 will be complete and reflect the latest health information. Further, EPA will undertake additional changes, improvements and updates to the report, as necessary, in response to the review now ongoing by the SAB. For example, the other sections of the report which deal with emissions, fate and transport of mercury in the environment, ecological impacts and control technologies may be revised.

## RELEASE OF MERCURY REPORT IN A PEER REVIEWED FORM

Question: Citing your desire to achieve sound science, can this committee have the assurance that the mercury report will be released only in a peer reviewed form?

Answer: The peer review process that has been followed for the Mercury Study Report to Congress is consistent with the peer review guidelines issued by the Office of Research and Development in November 1994. The report was classified as Category 1, requiring the highest level of peer review. The components of this review include approval of the peer review plan by the Assistant Administrator of the Office of Research and Development, review of the product by EPA scientists; review of the product by appropriate scientists external to the EPA, convening a peer review meeting; and stringent record keeping on all phases of the review process. The current draft is also being reviewed by EPA's Science Advisory Board (SAB). Because the activities of the SAB are public processes subject to the Federal Advisory Committee Act, the charge to the SAB and the materials being reviewed by the SAB are available to the public. In addition, there will be an external peer review workshop in which other Federal agencies will also participate. After final revisions and prior to being submitted to Congress, the affected sections of the report will be reviewed a second time by the SAB.

## PRERELEASE OF MERCURY REPORT

Question: Is it your intention to prerelease any sections of the mercury report before incorporating the more comprehensive studies and data? If so, on what rationale would such a release be made?

Answer: The sections we are considering for release as EPA technical reports prior to completion of the entire report include the emissions inventory (which would update previously published EPA inventories for mercury), the exposure assessment (which details fate and transport of mercury in the environment), an ecological assessment (which identifies "regions of concern" for various valued wildlife species) and the control technology and cost assessment (which addresses various management alternatives for mercury control). Although we believe these analyses will not be affected by the forthcoming data on human health effects, the SAB has been asked to look at the models used to predict fate and transport of mercury, and the social costs and benefits associated with mercury control. The SAB may recommend additional changes in these analyses. No decision has yet been made whether or when to release any sections of the Mercury Study as final EPA technical documents.

## ENERGY STAR

Question: Please provide a detailed breakdown of funding and personnel associated with EPA Energy Star programs in FY 1995, FY 1996, and the budget request for FY 1997, as well as a legal analysis from the Office of General Counsel of the statutory authority under which EPA is conducting each Energy Star-related program.

Answer: There are two statutory authorities which provide EPA the mandate to undertake the pollution prevention activities associated with the EPA Energy Star programs:

- Pollution Prevention and Emissions Control -- Section 103 (g) of the Clean Air Act -- requires the Administrator to conduct a basic research and technology program to develop, evaluate, and demonstrate non-regulatory strategies and technologies for air pollution prevention.
- The Pollution Prevention Act of 1990 requires the Administrator to develop and implement a strategy to promote source reduction. The strategy will facilitate adoption of source techniques by businesses; identify barriers and recommendations for overcoming them; identify measurable goals, tasks and resources for meeting the goals; and identify federal opportunities for source reduction.

Each of EPA's Energy Star-related programs are directed towards meeting the requirements of these mandates.

These programs also represent key initiatives of the US Climate Change Action Plan which will profitably reduce energy consumption and prevent pollution by avoiding carbon dioxide and other greenhouse gas emissions. The FY 1997 President's Budget request will keep these programs on target for delivering substantial emission reductions by the Year 2000.

The following information reflects the CCAP funding and personnel associated with EPA Commercial & Residential Energy Star Labeling Programs.

| FY 95 | | FY 96 Request | | FY 96 Proposed Operating Plan | | FY 97 Request | |
|---|---|---|---|---|---|---|---|
| FTE | $(M) | FTE | $(M) | FTE | $(M) | FTE | $(M) |
| 15.0 | $8.3 | 17.0 | $13.2 | 17.0 | $8.0 | 19.0 | $16.0 |

## NAS STUDY ON INDOOR RADON

Question: In the fiscal year 1996 appropriations cycle, EPA was requested in both the version of H.R. 2099 that was passed by the Senate (in legislative language) and in the conference report on H.R. 2099 (in report language) to commission a study from the National Academy of Sciences (NAS) on the scientific and technical underpinnings of EPA's policies and public recommendations on addressing health risks from indoor radon (such as recommended testing protocols, identification of high-radon areas, and building standards) and naturally occurring radioactive materials. Given that the proposal for this study enjoyed unanimous support in the Senate and on the conference committee, what steps has EPA taken, or does EPA plan to take, to initiate this NAS study?

Answer: EPA is currently in the last year of a four and a half-year, million dollar plus study with the National Academy of Sciences (NAS) to thoroughly review the available science on radon. The study, entitled the "Health Risks of Exposure to Radon (BEIR VI)" is being conducted by a Committee convened by the NAS-National Research Council's Board on Radiation Effects Research (BRER). This effort is scheduled to be completed December 31, 1996, and the final report is due early in calendar year 1997. It is intended to look at the science that underpins EPA policies on radon, as the Conference Report directs. We plan to report to Congress on the Academy's findings, explaining whether any changes in EPA radon policy are warranted as a result of their review.

With respect to an NAS study on naturally occurring radioactive materials, we believe this would be a useful project. We are looking at ways to fund an NAS study of this particularly controversial issue.

## QUESTIONS SUBMITTED BY SENATOR LAUTENBERG

### TRI INITIATIVE

Question: One of the legislative accomplishments of which I am most proud, is the Community Right to Know Act. That law, which has no substantive requirements, has been responsible for the lowering of toxic discharges by 64% over three years. The Chemical Manufacturers Association sued the EPA on the most recent additions to the required inventory. I was pleased and not surprised that the EPA won that case. During this year, the President issued an Initiative to expand the use of the Toxics Release Inventory, an initiative that was subject to some negative comments in this Committee's conference report. Could you bring us up to date on this initiative?

Answer: Your question suggests that you are referring to an effort commonly known as Toxics Release Inventory (TRI) Phase 3 and expansion of the industrial sectors required to report to TRI. With respect to TRI Phase 3, as indicated in response to another question submitted by the Committee on this topic, EPA is committed to proceeding with this project, and is currently reviewing options on the process to use for further development. Additional evaluation and comments are needed prior to developing a proposal. We expect to make a decision shortly, and the Agency will communicate the decision to potential stakeholders.

EPA believes that chemical use information will improve understanding on a range of important issues. Some are related to effective risk management, such as the flow of toxics through communities. However, chemical use data are also useful for looking at other issues as well. For example, materials accounting information can be used to track pollution prevention progress and efficiency of chemical use, both important for long-term sustainability. Chemical use information is an improvement over release and waste information for looking at occupational issues. Materials accounting can help to identify cases where toxics in the product stream are likely to play an important role . Lastly, by improving accountability, chemical use information supports new, smarter approaches to environmental protection, such as involving local communities, moving to multi-media permitting, encouraging flexible and innovative approaches, and focusing on environmental performance.

With regard to industry expansion, EPA published a proposal on June 26 of this year to expand the universe of industrial sectors required to report TRI information. Oil and gas exploration and production facilities were not included in this proposal. However, EPA will engage in a public dialogue with interested stakeholders and consider whether to propose extending the TRI reporting requirements to oil and gas exploration and production facilities.

## STATUS OF CANCER GUIDELINES

Question: EPA recently announced a proposal that would significantly change how they will evaluate chemicals to determine if they are cancer causing. There has been concern in the environmental community that this proposal could subject Americans to greater threats. Would you explain the status of that proposal and the rationale for it?

Answer: On April 23, 1996, EPA proposed revised guidelines for carcinogen risk assessment in the Federal Register (61 FR 17960). When final, the revised guidelines will replace existing guidelines published in 1986. The public comment period is open until August 21, 1996. The purpose of the guidelines is to provide an analytical and science policy framework for agency staff in performing cancer risk assessments. A copy of the proposal and a summary of its major features are attached. The proposal and the major comments raised will be reviewed in the Fall of 1996 by the EPA Science Advisory Board. Final guidelines, responding to comments from the Board and the Public, will be published in 1997. The primary impetus for revising the guidelines is the enormous impact of recent cancer research on our understanding of carcinogenic processes. The guidelines are being updated to account for this research and to allow for the incorporation of future research which rapidly continues to appear in the literature.

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# PROPOSED GUIDELINES FOR CARCINOGEN RISK ASSESSMENT

## SUMMARY

The *Proposed Guidelines for Carcinogen Risk Assessment* will be published in the *Federal Register* the week of April 22, 1996, for a 120-day public review and comment period. The Proposed Guidelines are a revision of EPA's 1986 *Guidelines for Carcinogen Risk Assessment* (51 FR 33992), and when final, will replace the 1986 cancer guidelines.

Since the publication of the 1986 cancer guidelines, there is a better understanding of the variety of ways in which carcinogens can operate. Today, many laboratories are moving toward adding new test protocols in their programs directed at mode of action questions. Therefore, the Proposed Guidelines provide an analytical framework that allows for the incorporation of all relevant biological information, recognize a variety of situations regarding cancer hazard, and are flexible enough to allow for consideration of future scientific advances.

The 1986 cancer guidelines have several limitations in addition to their inadequacy in addressing recent gains in the understanding of carcinogenesis. Although they called for the evaluation of all relevant information, the classification scheme used for identifying potential human hazard relied heavily on tumor findings, and in practice, seldom made full use of all biological information. Moreover, the conditions of the hazard were not taken into account. For example, it was common to assume that if an agent was carcinogenic by one route of exposure (e.g., inhalation), it posed a risk by any route. The 1986 cancer guidelines are also confined in that dose-response assessment allowed for only one default approach (i.e., the linearized multistage model for extrapolating risk from upper-bound confidence intervals). Moreover, very little guidance was given for risk characterization, the component of risk assessment that describes potential human risk, strengths and weaknesses of data, size of risk, and confidence of the conclusions for the risk manager. The Proposed Guidelines include the following changes to address these limitations, accommodate new information on carcinogenesis, and advance cancer risk assessment:

- **Hazard Assessment Emphasizes Analysis of All Biological Information** rather than just tumor findings.
- **Agent's Mode of Action is Emphasized** to reduce the uncertainty in describing the likelihood of harm and in determining the dose response approach(es). This emphasis should provide incentive for generating key information needed to reduce the default assumptions used in risk assessment.
- **Hazard Characterization is Added to Integrate the Data Analysis** of all relevant studies into a weight of evidence conclusion of hazard, to develop a working conclusion regarding the agent's mode of action in leading to tumor development, and to describe the conditions under which the hazard may be expressed (e.g., route, pattern, duration, and magnitude of exposure).
- **Weight of Evidence Narrative Replaces the Current Alphanumeric Classification**. The narrative is intended for the risk manager and lays out a summary of the key evidence, describes the agent's mode of action, characterizes the conditions of hazard expression, and recommends appropriate dose response approach(es). Significant strengths, weaknesses, and uncertainties of contributing evidence are highlighted. The overall conclusion as to the likelihood of human carcinogenicity is given by route of exposure.
- **Three Descriptors for Classifying Human Carcinogenic Potential**: "known/likely", "cannot be determined", and "not likely" replace the six alphanumeric categories (A,B1,B2,C,D,E) in the 1986 cancer guidelines. Subdescriptors are provided under these categories to further differentiate an agent's carcinogenic potential.
- **Biologically Based Extrapolation Model is the Preferred Approach** for quantifying risk. It is anticipated, however, that the necessary data for the parameters used in such models will not be available for most chemicals. The Proposed Guidelines allow for alternative quantitative methods, including several default approaches.
- **Dose Response Assessment is a Two Step Process**. In the first step, response data are modeled in the range of observation and in the second step, a determination of the point of

departure or range of extrapolation below the range of observation is made. In addition to modeling tumor data, the new guidelines call for the use and modeling of other kinds of responses if they are considered to be measures of carcinogenic risk.

- **Three Default Approaches—Linear, Nonlinear, or Both** are provided. Curve fitting in the observed range would be used to determine the effective dose corresponding to the lower 95% limit on a dose associated with 10% response ($LED_{10}$). The $LED_{10}$ would then be used as a point of departure for extrapolation to the origin as the *linear default* or for a margin of exposure (MOE) discussion as the *nonlinear default*. The $LED_{10}$ is the standard point of departure, but another may be used if more reasonable given the data set [(e.g., a no observed adverse effect level (NOAEL)]. In support of discussion of the anticipated decrease in risk associated with various MOEs, biological information concerning human variation and species differences, the slope of the dose response at the point of departure, background human exposure (if known), and other pertinent factors would be taken into consideration.
- **Descriptions of Major Default Assumptions and Criteria for Departing From Them** are described.
- **Risk Characterization is More Fully Developed** by providing direction on how the overall conclusion and confidence of risk is presented for the risk manager. The Proposed Guidelines call for assumptions and uncertainties to be clearly explained.

In addition to publication in the *Federal Register*, the full text of the Proposed Guidelines also will be made available from a number of different sources including the Internet (http://www.epa.gov/ORD), and in various formats (electronic, disk, and paper). See attached page for details about availability.

ENVIRONMENTAL PROTECTION AGENCY

[FRL–5460–3]

## *Proposed Guidelines for Carcinogen Risk Assessment*

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Availability and Opportunity to Comment on Proposed Guidelines for Carcinogen Risk Assessment.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is today publishing a document entitled Proposed Guidelines for Carcinogen Risk Assessment (hereafter "Proposed Guidelines"). These Proposed Guidelines were developed as part of an interoffice guidelines development program by a Technical Panel of the Risk Assessment Forum within EPA's Office of Research and Development. These Proposed Guidelines are a revision of EPA's 1986 Guidelines for Carcinogen Risk Assessment (hereafter "1986 cancer guidelines") published on September 24, 1986 (51 FR 33992). When final, these guidelines will replace the 1986 guidelines.

In a future Federal Register notice, the Agency intends to publish for comment how it will implement the Proposed Guidelines once they are finalized. The plans will propose and seek comment on how the Guidelines will be used for Agency carcinogen risk assessment and, in particular, will address the impact of the Guidelines on the Agency's existing assessments, and any mechanisms for handling reassessments under finalized Guidelines.

DATES: The Proposed Guidelines are being made available for a 120-day public review and comment period. Comments must be in writing and must be postmarked by August 21, 1996. See **Addresses** section for guidance on submitting comments.

ADDRESSES: The Proposed Guidelines will be made available in the following ways:

(1) The electronic version will be accessible on EPA's Office of Research and Development home page on the Internet at http://www.epa.gov/ORD

(2) 3½ inch high-density computer diskettes in Wordperfect 5.1 format will be available from ORD Publications, Technology Transfer and Support Division, National Risk Management Research Laboratory, Cincinnati, OH; telephone: 513–569–7562; fax: 513–569–7566. Please provide the EPA No. (EPA/600/P–92/003Ca) when ordering.

(3) This notice contains the full draft document. In addition, copies of the draft will be available for inspection at EPA headquarters and regional libraries, through the U.S. Government Depository Library program, and for purchase from the National Technical Information Service (NTIS), Springfield, VA; telephone: 703–487–4650, fax: 703–321–8547. Please provide the NTIS PB No. (PB96–157599) ($35.00) when ordering.

SUBMITTING COMMENTS: Comments on the Proposed Guidelines may be mailed or delivered to the Technical Information Staff (8623), NCEA–WA/OSG, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. Comments should be in writing and must be postmarked by the date indicated. Please submit one unbound original with pages numbered consecutively, and three copies. For attachments, provide an index, number pages consecutively with the comment, and submit an unbound original and three copies.

Please note that all technical comments received in response to this notice will be placed in a public record. For that reason, commenters should not submit personal information (such as medical data or home address), Confidential Business Information, or information protected by copyright. Due to limited resources, acknowledgments will not be sent.

FOR FURTHER INFORMATION CONTACT: Technical Information Staff, Operations and Support Group, National Center for Environmental Assessment—Washington Office, telephone: 202–260–7345. Email inquiries may be sent to cancer-guidelines@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: In 1983, the National Academy of Sciences (NAS)/National Research Council (NRC) published its report entitled Risk Assessment in the Federal Government: Managing the Process (NRC, 1983). In that report, the NRC recommended that Federal regulatory agencies establish "inference guidelines" to ensure consistency and technical quality in risk assessments and to ensure that the risk assessment process was maintained as a scientific effort separate from risk management. The 1986 cancer guidelines were issued on September 24, 1986 (51 FR 33992). The Proposed Guidelines published today continue the guidelines development process. These guidelines set forth principles and procedures to guide EPA scientists in the conduct of Agency cancer risk assessments and to inform Agency decisionmakers and the public about these procedures.

Both the 1986 guidelines and the current proposal contain inference guidance in the form of default inferences to bridge gaps in knowledge and data. Research conducted in the past decade has elucidated much about the nature of carcinogenic processes and continues to provide new information. The intent of this proposal is to take account of knowledge available now and to provide flexibility for the future in assessing data and employing default inferences, recognizing that the guidelines cannot always anticipate future research findings. Because methods and knowledge are expected to change more rapidly than guidelines can practicably be revised, the Agency will update specific assessment procedures with peer-reviewed supplementary, technical documents as needed. Further revision of the guidelines themselves will take place when extensive changes are necessary.

Since 1986, the EPA has sponsored several workshops about revising the cancer guidelines (U.S. EPA, 1989b, 1989c, 1994a). The Society for Risk Analysis conducted a workshop on the subject in connection with its 1992 annual meeting (Anderson et al., 1993). Participants in the most recent workshop in 1994 reviewed an earlier version of the guidelines proposed here and made numerous recommendations about individual issues as well as broad recommendations about explanations and perspectives that should be added. Most recently, the Committee on the Environment and Natural Resources of the Office of Science and Technology Policy reviewed the guidelines at a meeting held on August 15, 1995. The EPA appreciates the efforts of all participants in the process and has tried to address their recommendations in this proposal.

In addition, the recommendations of the NRC (1994) in Science and Judgment in Risk Assessment have been addressed. Responses to these recommendations are given generally in Appendix B as well as being embodied in the Proposed Guidelines. Responses that explain the major default assumptions adopted under these guidelines and the policy for using and departing from these default assumptions appear in Section 1.3.

The Science Advisory Board also will review these Proposed Guidelines at a meeting to be announced in a future Federal Register notice. Following these reviews Agency staff will prepare summaries of the public and SAB comments. Appropriate comments will be incorporated, and the revised Guidelines will be submitted to the Risk Assessment Forum for review. The Agency will consider comments from the public, the SAB, and the Risk Assessment Forum in its recommendations to the EPA Administrator.

## MAJOR CHANGES FROM THE 1986 GUIDELINES

### *Characterizations*

Increased emphasis on providing characterization discussions for the hazard, dose response, and exposure sections is part of the proposal. These discussions will summarize the assessments to explain the extent and weight of evidence, major points of interpretation and rationale, and strengths and weaknesses of the evidence and the analysis, and to discuss alternative conclusions and uncertainties that deserve serious consideration (U.S. EPA, 1995). They serve as starting materials for the risk characterization process which completes the risk assessment.

### *Weighing Evidence of Hazard*

A major change is in the way hazard evidence is weighed in reaching conclusions about the human carcinogenic potential of agents. In the 1986 cancer guidelines, tumor findings in animals or humans were the dominant components of decisions. Other information about an agent's properties, its structure-activity relationships to other carcinogenic agents, and its activities in studies of carcinogenic processes was often limited and played only a modulating role as compared with tumor findings. In this proposal, decisions come from considering all of the evidence. This change recognizes the growing sophistication of research methods, particularly in their ability to reveal the modes of action of carcinogenic agents at cellular and subcellular levels as well as toxicokinetic and metabolic processes. The effect of the change on the assessment of individual agents will depend greatly on the availability of new kinds of data on them in keeping with the state of the art. If these new kinds of data are not forthcoming from public and private research on agents, assessments under these guidelines will not differ significantly from assessments under former guidelines.

Weighing of the evidence includes addressing the likelihood of human carcinogenic effects of the agent and the conditions under which such effects may be expressed, as these are revealed in the toxicological and other biologically important features of the agent. (Consideration of actual human exposure and risk implications are done separately; they are not parts of the hazard characterization). In this respect, the guidelines incorporate recommendations of the NRC (1994). In that report, the NRC recommends expansion of the former concept of hazard identification, which rests on simply a finding of carcinogenic potential, to a concept of characterization that includes dimensions of the expression of this potential. For example, an agent might be observed to be carcinogenic via inhalation exposure and not via oral exposure, or its carcinogenic activity might be secondary to another toxic effect. In addition, the consideration of evidence includes the mode(s) of action of the agent apparent from the available data as a basis for approaching dose response assessment.

### *Classification Descriptors*

To express the weight of evidence for carcinogenic hazard potential, the 1986 cancer guidelines provided summary rankings for human and animal cancer studies. These summary rankings were integrated to place the overall evidence in classification groups A through E, Group A being associated with the greatest probability of human carcinogenicity and Group E with evidence of noncarcinogenicity in humans. Data other than tumor findings played a modifying role after initial placement of an agent into a group.

These Proposed Guidelines take a different approach, consistent with the change in the basic approach to weighing evidence. No interim classification of tumor findings followed by modifications with other data takes place. Instead, the conclusion reflects the weighing of evidence in one step. Moreover, standard descriptors of conclusions are employed rather than letter designations, and these are incorporated into a brief narrative description of their informational basis. The narrative with descriptors replaces the previous letter designation. The descriptors are in three categories: "known/likely," "cannot be determined," or "not likely." For instance, using a descriptor in context, a narrative could say that an agent is likely to be carcinogenic by inhalation exposure and not likely to be carcinogenic by oral exposure. The narrative explains the kinds of evidence available and how they fit together in drawing conclusions, and points out significant issues/strengths/limitations of the data and conclusions. Subdescriptors are used to further refine the conclusion. The narrative also summarizes the mode of action information underlying a recommended approach to dose response assessment.

In considering revision of the former classification method, the Agency has examined other possibilities that would retain the use of letter and number designation of weights of evidence. The use of standard descriptors within a narrative presentation is proposed for three primary reasons. First, the proposed method permits inclusion of explanations of data and of their strengths and limitations. This is more consistent with current policy emphasis on risk characterization. Second, it would take a large set of individual number or letter codes to cover differences in the nature of contributing information (animal, human, other), route of exposure, mode of action, and relative overall weight. When such a set becomes large—10 to 30 codes—it is too large to be a good communication device, because people cannot remember the definitions of the codes so they have to be explained in narrative. Third, it is impossible to predefine the course of cancer research and the kinds of data that may become available. A flexible system is needed to accommodate change in the underlying data and inferences, and a system of codes might become out of date, as has the one in the 1986 cancer guidelines.

### *Dose Response Assessment*

The approach to dose response assessment calls for analysis that follows the conclusions reached in the hazard assessment as to potential mode(s) of action. The assessment begins by analyzing the empirical data in the range of observation. When animal studies are the basis of the analysis, the estimation of a human equivalent dose utilizes toxicokinetic data, if appropriate and adequate data are available. Otherwise, default procedures are applied. For oral dose, the default is to scale daily applied doses experienced for a lifetime in proportion to body weight raised to the 0.75 power. For inhalation dose, the default methodology estimates respiratory deposition of particles and gases and estimates internal doses of gases with different absorption characteristics. These two defaults are a change from the 1986 cancer guidelines which provided a single scaling factor of body weight raised to the 0.66 power. Another change from the 1986 guidelines is that response data on effects of the agent on carcinogenic processes are analyzed (nontumor data) in addition to data on tumor incidence. If appropriate, the analyses of data on tumor incidence and on precursor effects may be combined, using precursor data to extend the dose response curve below the tumor data. Even if combining data is not appropriate, study of the dose response for effects believed to be part of the carcinogenic influence of the agent may assist in thinking about the relationship of exposure and response in the range of observation and at exposure levels below the range of observation.

Whenever data are sufficient, a biologically based or case-specific dose response model is developed to relate dose and response data in the range of empirical observation. Otherwise, as a standard, default procedure, a model is used to curve-fit the data. The lower 95 percent confidence limit on a dose associated with an estimated 10 percent increased tumor or relevant nontumor response ($LED_{10}$) is identified. This generally serves as the point of departure for extrapolating the relationship to environmental exposure levels of interest when the latter are outside the range of observed data. The environmental exposures of interest may be measured ones or levels of risk management interest in considering potential exposure control options. Other points of departure may be more appropriate for certain data sets; as described in the guidance, these may be used instead of the $LED_{10}$. Additionally, the $LED_{10}$ is available for comparison with parallel analyses of other carcinogenic agents or of noncancer effects of agents and for gauging and explaining the magnitude of subsequent extrapolation to low-dose levels. The $LED_{10}$, rather than the $ED_{10}$ (the estimate of a 10 percent increased response), is the proposed standard point of departure for two reasons. One is to permit easier comparison with the benchmark dose procedure for noncancer health assessment—also based on the lower limit on dose. Another is that the lower limit, as opposed to the central estimate, accounts for uncertainty in the experimental data. The issue of using a lower limit or central estimate was discussed at a workshop held on the benchmark procedure for noncancer assessment (Barnes et al., 1995) and at a workshop on a previous version of this proposal (U.S. EPA, 1994b). The latter workshop recommended a central estimate; the benchmark workshop recommended a lower limit.

The second step of dose response assessment is extrapolation to lower dose levels, if needed. This is based on a biologically based or case-specific model if supportable by substantial data. Otherwise, default approaches are applied that accord with the view of mode(s) of action of the agent. These include approaches that assume linearity or nonlinearity of the dose response relationship or both. The default approach for linearity is to extend a straight line to zero dose, zero response. The default approach for nonlinearity is to use a margin of exposure analysis rather than estimating the probability of effects at low doses. A margin of exposure analysis explains the biological considerations for comparing the observed data with the environmental exposure levels of interest and helps in deciding on an acceptable level of exposure in accordance with applicable management factors.

The use of straight line extrapolation for a linear default is a change from the 1986 guidelines which used the "linearized multistage" (LMS) procedure. This change is made because the former modeling procedure gave an appearance of specific knowledge and sophistication unwarranted for a default. The proposed approach is also more like that employed by the Food and Drug Administration (U.S. FDA, 1987). The numerical results of the straight line and LMS procedures are not significantly different (Krewski *et al.*, 1984). The use of a margin of exposure approach is included as a new default procedure to accommodate cases in which there is sufficient evidence of a nonlinear dose response, but not enough evidence to construct a mathematical model for the relationship. (The Agency will continue to seek a modeling method to apply in these cases. If a modeling approach is developed, it will be subject to peer review and public notice in the context of a supplementary document for these guidelines.)

The public is invited to provide comments to be considered in EPA decisions about the content of the final guidelines. After the public comment period, the EPA Science Advisory Board will be asked to review and provide advice on the guidelines and issues raised in comments. EPA asks those who respond to this notice to include their views on the following:

(1) The proposed guidance for characterization of hazard, including the weight of evidence descriptors and weight of evidence narrative which are major features of the proposal. There are three categories of descriptors: "known/likely," "cannot be determined," and "not likely" which are further refined by subdescriptors. It is felt that these three descriptors will satisfactorily delineate the types of evidence bearing on carcinogenicity as they are used with subdescriptors in the context of a narrative of data and rationale. However, an issue that has been discussed by external peer reviewers and by EPA staff is whether the descriptor-subdescriptor called "cannot be determined—suggestive evidence" should become a separate, fourth category called "suggestive." The EPA may choose this course in the final guidelines and requests comment. In considering this issue, commenters may wish to refer not only to Sections 2.6.2. and 2.7.2. which cover the descriptors and narrative, but also to case study example #6 in Section 2.6.3. and example narrative #2 in Appendix A of the proposal. EPA asks commenters on this question to address the rationale

(science as well as policy) for leaving the categories of descriptors as proposed or making the fourth category. How might the coverage of a "suggestive" category be defined in order to be most useful?

(2) The use of mode of action information in hazard characterization and to guide dose response assessment is a central part of the proposed approach to bringing new research on carcinogenic processes to bear in assessments of environmental agents (Sections 1.3.2., 2.3.2., 2.5., 3.1.). The appropriate use of this information now and in the future is important. EPA requests comment on the treatment of such information in the proposal, including reliance on peer review as a part of the judgmental process on its application.

(3) Uses of nontumor data in the dose response assessment and the methodological and science policy issues posed are new to these guidelines (Sections 1.3.2., 3.1.2.). EPA requests comment on both issues.

(4) Dose response assessment is proposed to be considered in two parts—range of observed data and range of extrapolation (Section 3.1.). The lower 95 percent confidence limit on a dose associated with a 10 percent response (tumor or nontumor response) is proposed as a default point of departure, marking the beginning of extrapolation. This is a parallel to the benchmark procedure for evaluating dose-response of noncancer health endpoints (Barnes et al., 1995). An alternative is to use the central estimate of a 10 percent response. Another alternative is to use a 1 percent, instead of a 10 percent, response when the observed data are tumor incidence data. Does the generally larger sample size of tumor effect studies support using a 1 percent response as compared with using 10 percent for smaller studies? Are there other approaches for the point of departure that might be considered?

(5) Discussions of default assumptions and other responses to the 1994 NRC report Science and Judgment in Risk Assessment appear in Section 1.3.1. and Appendix B of the proposal, respectively. Comments are requested on responses to the NRC recommendations and how the guidelines as a whole address them.

Dated: April 10, 1996.

CAROL M. BROWNER,
*Administrator.*

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## 1. Introduction

### *1.1.Purpose and Scope of the Guidelines*

These guidelines revise and replace United States Environmental Protection Agency (EPA) Guidelines for Carcinogen Risk Assessment published in 51 FR 33992, September 24, 1986. The guidelines provide EPA staff and decisionmakers with guidance and perspectives to develop and use risk assessments. They also provide basic information to the public about the Agency's risk assessment methods.

The guidelines encourage both regularity in procedures to support consistency in scientific components of Agency decisionmaking and innovation to remain up-to-date in scientific thinking. In balancing these goals, the Agency relies on input from the general scientific community through established scientific peer review processes. The guidelines incorporate basic principles and science policies based on evaluation of the currently available information. As more is discovered about carcinogenesis, the need will arise to make appropriate changes in risk assessment guidance. The Agency will revise these guidelines when extensive changes are due. In the interim, the Agency will issue special reports, after appropriate peer review, to supplement and update guidance on single topics, (e.g., U.S. EPA, 1991b)

### *1.2. Organization and Application of the Guidelines*

#### 1.2.1. Organization

Publications of the Office of Science and Technology Policy (OSTP, 1985) and the National Research Council (NRC, 1983, 1994) provide information and general principles about risk assessment. Risk assessment uses available scientific information on the properties of an agent[1] and its effects in biological systems to provide an evaluation of the potential for harm as a consequence of environmental exposure to the agent. Risk assessment is one of the scientific analyses available for consideration, with other analyses, in decisionmaking on environmental protection. The 1983 and 1994 NRC documents organize risk assessment information into four areas: hazard identification, dose response assessment, exposure assessment, and risk characterization. This structure appears in these guidelines, which additionally emphasize characterization of evidence and conclusions in each part of the assessment. In particular, the guidelines adopt the approach of the NRC's 1994 report in adding a dimension of characterization to the hazard identification step. Added to the identification of hazard is an evaluation of the conditions under which its expression is anticipated. The risk assessment questions addressed in these guidelines are:

—For hazard—Can the agent present a carcinogenic hazard to humans, and if so, under what circumstances?
—For dose response—At what levels of exposure might effects occur?
—For exposure—What are the conditions of human exposure?
—For risk—What is the character of the risk? How well do data support conclusions about the nature and extent of the risk?

#### 1.2.2. Application

The guidelines apply within the framework of policies provided by applicable EPA statutes and do not alter such policies. The guidelines cover assessment of available data. They do not imply that one kind of data or another is prerequisite for regulatory action concerning any agent. Risk management applies directives of regulatory legislation, which may require consideration of potential risk, or solely hazard or exposure potential, along with social, economic, technical, and other factors in decisionmaking. Risk assessments support decisions, but to maintain their integrity as decisionmaking tools, they are not influenced by consideration of the social or economic consequences of regulatory action.

Not every EPA assessment has the same scope or depth. Agency staff often conduct screening-level assessments for priority-setting or separate assessments of hazard or exposure for ranking purposes or to decide whether to invest resources in collecting data for a full assessment. Moreover, a given assessment of hazard and dose response may be used with more than one exposure assessment that may be conducted separately and at different times as the need arises in studying environmental problems in various media. The guidelines apply to these various situations in appropriate detail given the scope and depth of the particular assessment. For example, a screening assessment may be based almost entirely on structure-activity relationships and default assumptions. As more data become available, assessments can replace or modify default assumptions accordingly. These guidelines do not require that all of the kinds of data covered here be available for either assessment or decisionmaking. The level of detail of an assessment is a matter of Agency management policy regarding the applicable decisionmaking framework.

### *1.3. Use of Default Assumptions*

The National Research Council, in its 1983 report on the science of risk assessment (NRC, 1983), recognized that default assumptions are necessarily made in risk assessments where gaps exist in general knowledge or in available data for a particular agent. These default assumptions are inferences based on general scientific knowledge of the phenomena in question and are also matters of policy concerning the appropriate way to bridge uncertainties that concern potential risk to human health (or, more generally, to environmental systems) from the agent under assessment.

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[1] The term "agent" refers generally to any chemical substance, mixture, or physical or biological entity being assessed, unless otherwise noted.

EPA's 1986 guidelines for cancer risk assessment (EPA, 1986) were developed in response to the 1983 NRC report. The guidelines contained a number of default assumptions. They also encouraged research and analysis that would lead to new risk assessment methods and data and anticipated that these would replace defaults. The 1986 guidelines did not explicitly discuss how to depart from defaults. In practice, the agency's assessments routinely have employed defaults and, until recently, only occasionally departed from them.

In its 1994 report on risk assessment, the NRC supported continued use of default assumptions (NRC, 1994). The NRC report thus validated a central premise of the approach to risk assessment that EPA had evolved in preceding years—the making of science policy inferences to bridge gaps in knowledge—while at the same time recommending that EPA develop more systematic and transparent guidelines to inform the public of the default inferences EPA uses in practice. It recommended that the EPA review and update the 1986 guidelines in light of evolving scientific information and experience in practice in applying those guidelines, and that the EPA explain the science and policy considerations underlying current views as to the appropriate defaults and provide general criteria to guide preparers and reviewers of risks assessments in deciding when to depart from a default. Pursuant to this recommendation, the following discussion presents descriptions of the major defaults and their rationales. In addition, it presents general policy guidance on using and departing from defaults in specific risk assessments.

### 1.3.1. Default Assumptions

The 1994 NRC report contains several recommendations regarding flexibility and the use of default options:

—EPA should continue to regard the use of default options as a reasonable way to deal with uncertainty about underlying mechanisms in selecting methods and models for use in risk assessment.

—EPA should explicitly identify each use of a default option in risk assessments.

—EPA should clearly state the scientific and policy basis for each default option.

—The Agency should consider attempting to give greater formality to its criteria for a departure from default options in order to give greater guidance to the public and to lessen the possibility of ad hoc, undocumented departures from default options that would undercut the scientific credibility of the Agency's risk assessments. At the same time, the Agency should be aware of the undesirability of having its guidelines evolve into inflexible rules.

—EPA should continue to use the Science Advisory Board and other expert bodies. In particular, the Agency should continue to make the greatest possible use of peer review, workshops, and other devices to ensure broad peer and scientific participation to guarantee that its risk assessment decisions will be based on the best science available through a process that allows full public discussion and peer participation by the scientific community.

In the 1983 report (p. 28), NAS defined the use of "inference options" (default options) as a means to bridge inherent uncertainties in risk assessment. These options exist when the assessment encounters either "missing or ambiguous information on a particular substance" or "gaps in current scientific theory." Since there is no instance in which a set of data on an agent or exposure is complete, all risk assessments must use general knowledge and policy guidance to bridge data gaps. Animal toxicity data are used, for example, to substitute for human data because we do not test human beings. The report described the components of risk assessment in terms of questions encountered during analysis for which inferences must be made. The report noted (p. 36) that many components "* * * lack definitive scientific answers, that the degree of scientific consensus concerning the best answer varies (some are more controversial than others), and that the inference options available for each component differ in their degree of conservatism. The choices encountered in risk assessment rest, to various degrees, on a mixture of scientific fact and consensus, on informed scientific judgment, and on policy determinations (the appropriate degree of conservatism) * * *." The report did not note that the mix varies significantly from case to case. For instance, a question that arises in hazard identification is how to use experimental animal data when the routes of exposure differ between animals and humans. A spectrum of inferences could be made, ranging from the most conservative, or risk adverse one that effects in animals from one route may be seen in humans by another route, to an intermediate, conditional inference that such translation of effects will be assumed if the agent is absorbed by humans through the second route, to a nonconservative view that no inference is possible and the agent's effects in animals must be tested by the second route. The choice of an inference, as the report observed, comes from more than scientific thinking alone. While the report focused mainly on the idea of conservatism of public health as a science policy rationale for making the choice, it did not evaluate other considerations. These include such things as the matters of time and resources and whether the analysis is for an important decision required to be made soon or is simply a screening or ranking effort. For a screening analysis, one might make several "worst case" inferences to determine if, even under those conditions, risk is low enough that a problem can be eliminated from further consideration. In the above discussion concerning inferences about route-to-route extrapolation, one might use the most conservative one for screening.

These revised guidelines retain the use of default assumptions as recommended in the 1994 report. Generally, these defaults remain public health conservative, but in some instances, they have been modified to reflect the evolution of scientific knowledge since 1986.

In addition, the guidelines reflect evaluation of experience in practice in applying defaults and departing from them in individual risk assessments conducted under the 1986 guidelines. The application and departure from defaults and the principles to be used in these judgments have been matters of debate among practitioners and reviewers of risk assessments. Some observers believe that in practice EPA risk assessors have been too resistant to considering departures; others question whether proposed departures have been adequately supported. Some cases in which departures have been considered have been generally accepted, while others have been controversial. The guidelines here are intended to be both explicit and more flexible than in the past concerning the basis for making departures from defaults, recognizing that expert judgment and peer review are essential elements of the process.

In response to the recommendations of the 1994 report, these guidelines call for identification of the default assumptions used within assessments and for highlighting significant issues about defaults within characterization summaries of component analyses in assessment documents. As to the use of peer review to aid in making judgments about applying or departing from defaults, we agree with the NRC recommendation. The Agency has long made use of workshops, peer review of documents and guidelines, and consultations as well as formal peer review by the Science Advisory Board (SAB). In 1994, the Administrator of EPA published formal guidance for peer review of EPA scientific work products that increases the amount of peer review for risk assessments as well as other work, as a response to the NRC report and to SAB recommendations (U.S. EPA, 1994b).

The 1994 NRC report recommended that EPA should consider adopting principles or criteria that would give greater formality and transparency to decisions to depart from defaults. The report named several possible criteria for such principles (p. 7): "* * * [P]rotecting the public health, ensuring scientific validity, minimizing serious errors in estimating risks, maximizing incentives for research, creating an orderly and predictable process, and fostering openness and trustworthiness. There might be additional relevant criteria * * *." The report indicated, however, that the committee members had not reached consensus on a single criterion to address the key issue of how much certainty or proof a risk assessor must have in order to justify departing from a default. Appendix N of the report contains two presentations of alternative views held by some committee members on this issue. One view, known as "plausible conservatism," suggested that departures from defaults should not be made unless new information improves the understanding of a biological process to the point that relevant experts reach consensus that the conservative default assumption concerning that process is no longer plausible. The same criterion was recommended where the underlying scientific mechanism is well understood, but where a default is used to address missing data. In this case, the default should not be replaced with case-specific data unless it is the consensus of relevant experts that the proffered data make the default assumption no longer plausible. Another view, known as the "maximum use of scientific information" approach, acknowledged that the initial choice of defaults should be conservative but argued that conservatism should not be a factor in determining whether to depart from the default in favor of an alternate biological theory or alternate data. According to this view, it should not be necessary to reach expert consensus that the default assumption had been rendered implausible; it should be sufficient that risk assessors find the alternate approach more plausible than the default.

The EPA is not adopting a list of formal decision criteria in the sense of a checklist based on either view. It would not be helpful to generate a checklist of uniform criteria for several reasons. First, risk assessments are highly variable in content and purpose. Screening assessments may be purposely "worst case" in their default assumptions to eliminate problems from further investigation. Subsequent risk assessments based on a fuller data set can discard worst-case default assumptions in favor of plausibly conservative assumptions and progressively replace or modify the latter with data. No uniform checklist will fit all cases. Second, a checklist would likely become more a source of rote discussion than of enlightenment about the process.

Instead, these guidelines use a combination of principles and process in the application of and departure from default assumptions. The guidelines provide a framework of default assumptions to allow risk assessment to proceed when current scientific theory or available case-specific data do not provide firm answers in a particular case, as the 1983 report outlined. Some of the default assumptions bridge large gaps in fundamental knowledge which will be filled by basic research on the causes of cancer and on other biological processes, rather than by agent-specific testing. Other default assumptions bridge smaller data gaps that can feasibly be filled for a single agent, such as whether a metabolic pathway in test animals is like (default) or unlike that in humans.

The decision to use a default, or not, is a choice considering available information on an underlying scientific process and agent-specific data, depending on which kind of default it is. Generally, if a gap in basic understanding exists, or if agent-specific data are missing, the default is used without pause. If data are present, their evaluation may reveal inadequacies that also lead to use of the default. If data support a plausible alternative to the default, but no more strongly than they support the default, both the default and its alternative are carried through the assessment and characterized for the risk manager. If data support an alternative to the default as the more reasonable judgment, the data are used. (This framework of choices is not wholly applicable to screening assessments. As mentioned above, screening assessments may appropriately use "worst case" inferences to determine if, even under those conditions, risk is low enough that a problem can be eliminated from further consideration.)

Scientific peer review, peer consultative workshops and similar processes are the principal ways determining the strength of thinking and generally accepted views within the scientific community about the application of and departure from defaults and about judgments concerning the plausibility and persuasiveness of data in a particular case. The choices made are explicitly discussed in the assessment, and if a particular choice raises a significant issue, it is highlighted in the risk characterization.

The discussion of major defaults in these guidelines together with the explicit discussion of the choice of inferences within the assessment and the processes of peer review and peer consultation will serve the several goals stated in the 1994 report. One is to encourage research, since results of research efforts will be considered. Another is to allow timely decisionmaking, when time is a constraint, by supporting completion of the risk assessment using defaults as needed. Another is to be flexible, using new science as it develops. Finally, the use of public processes of peer consultation and peer review will ensure that discipline of thought is maintained to support trust in assessment results.

Experience has shown that the most difficult part of the framework of choices is the judgment of whether a data analysis is both biologically plausible and persuasive as applied to the case at hand. There is no set of rules for making this judgment in all cases. Two criteria that apply in these guidelines are that the underlying scientific principle has been generally accepted within the scientific community and that supportive experiments are available that test the application of the principle to the agent under review. For example, mutagenicity through reactivity with DNA has been generally accepted as a carcinogenic influence for many years. This acceptance, together with evidence of such mutagenicity in experiments on an agent, provides plausible and persuasive support for the inference that mutagenicity is a mode of action for the agent.

Judgments about plausibility and persuasiveness of analyses vary according to the scientific nature of the default. An analysis of data may replace a default or modify it. An illustration of the former is development of EPA science policy on the issue of the relevance for humans of male rat kidney neoplasia involving alpha 2u globulin (U.S. EPA, 1991b). The 1991 EPA policy gives guidance on the kind of experimental findings that demonstrate whether the alpha 2u globulin mechanism is present and responsible for carcinogenicity in a particular case. Before this policy guidance was issued, the default assumption was that neoplasia in question was relevant to humans and indicated the potential for hazard to humans. A substantial body of data was developed by public and private research groups as a foundation for the view that the alpha 2u globulin-induced response was not relevant to humans. These studies first addressed the alpha 2u globulin mechanism in the rat and whether this mechanism has a counterpart in the human being, both were large research efforts. The resulting data presented difficulties; some reviewers were concerned that the mechanism in the rat appeared to be understood only in outline, not in detail, and felt that the data were insufficient to show the lack of a counterpart mechanism in humans. It was particularly difficult to support a negative such as the nonexistence of a mechanism in humans because so little is known about what the mechanisms are in humans. Despite these concerns, in its 1991 policy guidance, EPA concluded that the alpha 2u globulin-induced response in rats should be regarded as not relevant to humans (i.e., as not indicating human hazard).

One lesson in the development and peer review of this policy is that if the default concerns an inherently complex biological question, large amounts of work will be required to replace the default. A second is that addressing a negative is difficult. A third is that "proof" in the strict sense of having laid all reasonable doubt to rest is not required. Instead, an alternative may displace a default when it is generally accepted in peer review as the most reasonable judgment. The issue of relevance may not always be so difficult. It would be an experimentally easier task, for example, to determine whether carcinogenesis in an animal species is due to a metabolite of the agent in question that is not produced in humans.

When scientific processes are understood but case-specific data are missing, defaults can be constructed to be modified by experimental data, even if data do not suffice to replace them entirely. For example, the approaches adopted in these guidelines for scaling dose from experimental animals to humans are constructed to be either modified or replaced as data become available on toxicokinetic parameters for the particular agent being assessed. Similarly, the selection of an approach or approaches for dose response assessment is based on a series of decisions that consider the nature and adequacy of available data in choosing among alternative modeling and default approaches.

The 1994 NRC report notes (p. 6) that "[a]s scientific knowledge increases, the science policy choices made by the Agency and Congress should have less impact on regulatory decisionmaking. Better data and increased understanding of biological mechanisms should enable risk assessments that are less dependent on conservative default assumptions and more accurate as predictions of human risk." Undoubtedly, this is the trend as scientific understanding increases. However, some gaps in knowledge and data will doubtless continue to be encountered in assessment of even data-rich cases, and it will remain necessary for risk assessments to continue using defaults within the framework set forth here.

### 1.3.2. Major Defaults

This discussion covers the major default assumptions commonly employed in a cancer risk assessment and adopted in these guidelines. They are predominantly inferences necessary to use data observed under empirical conditions to estimate events and outcomes under environmental conditions. Several inferential issues arise when effects seen in a subpopulation of humans or animals are used to qualitatively infer potential effects in the population of environmentally exposed humans. Several more inferential issues arise in extrapolating the exposure-effect relationship observed empirically to lower-exposure environmental conditions. The following issues cover the major default areas. Typically, an issue has some subissues; they are introduced here, but are discussed in greater detail in subsequent sections.

—Is the presence or absence of effects observed in a human population predictive of effects in another exposed human population?
—Is the presence or absence of effects observed in an animal population predictive of effects in exposed humans?
—How do metabolic pathways relate across species?
—How do toxicokinetic processes relate across species?
—What is the correlation of the observed dose response relationship to the relationship at lower doses?

1.3.2.1. *Is the Presence or Absence of Effects Observed in a Human Population Predictive of Effects in Another Exposed Human Population?* When cancer effects in exposed humans are attributed to exposure to an exogenous agent, the default assumption is that such data are predictive of cancer in any other exposed human population. Studies either attributing cancer effects in humans to exogenous agents or reporting no effects are often studies of occupationally exposed humans. By sex, age, and general health, workers are not representative of the general population exposed environmentally to the same agents. In such studies there is no opportunity to observe whether infants and children, males, or females who are under represented in the study, or people whose health is not good, would respond differently. Therefore, it is understood that this assumption could still underestimate the response of certain sensitive human subpopulations, i.e. biologically vulnerable parts of the population may be left out of risk assessments (NRC, 1993a, 1994). Consequently, this is a default that does not err on the side of public health conservatism, as the 1994 NRC report also recognizes.

On the one hand, if effects are seen in a worker population, this may be in fact indicative of heightened effects in sensitive subpopulations. There is not enough knowledge yet to form a basis for any generally applicable, qualitative inference to compensate for this knowledge gap. In these guidelines, this problem is left to case-by-case analysis, to be attended to as future research and information on particular agents allow. When information on a sensitive subpopulation exists, it will be used. The topic of variability is addressed further in the discussion of quantitative default assumptions about dose response relationships below. On the other hand, when cancer effects are not found in an exposed human population, this information by itself is not generally sufficient to conclude that the agent poses no carcinogenic hazard to this or other populations of potentially exposed humans. This is because epidemiologic studies usually have low power to detect and attribute responses (section 2.2.1.). This may be particularly true when extrapolating null results from a healthy, worker population to other potentially sensitive exposed humans. Again, the problem is left to case-by-case analysis.

1.3.2.2. *Is the Presence or Absence of Effects Observed in an Animal Population Predictive of Effects in Exposed Humans?* The default assumption is that positive effects in animal cancer studies indicate that the agent under study can have carcinogenic potential in humans. Thus, if no adequate human data are present, positive effects in animal cancer studies are a basis for assessing the carcinogenic hazard to humans. This assumption is a public health conservative policy, and it is both appropriate and necessary given that we do not test for carcinogenicity in humans. The assumption is supported by the fact that nearly all of the agents known to cause cancer in humans are carcinogenic in animals in tests with adequate protocols (IARC, 1994; Tomatis et al., 1989; Huff, 1994). Moreover, almost one-third of human carcinogens were identified subsequent to animal testing (Huff, 1993). Further support is provided by research on the molecular biology of cancer processes, which has shown that the mechanisms of control of cell growth and differentiation are remarkably homologous among species and highly conserved in evolution. Nevertheless, the same research tools that have enabled recognition of the nature and commonality of cancer processes at the molecular level also have the power to reveal differences and instances in which animal responses are not relevant to humans (Linjinsky, 1993; U.S. EPA, 1991b). Under these guidelines, available mode of action information is studied for its implications in both hazard and dose response assessment and its effect on default assumptions.

There may be instances in which the use of an animal model would identify a hazard in animals that is not truly a hazard in humans (e.g., the alpha-2u-globulin association with renal neoplasia in male rats (U.S. EPA, 1991b)). The extent to which animal studies may yield false positive indications for humans is a matter of scientific debate. To demonstrate that a response in animals is not relevant to any human situation, adequate data to assess the relevancy issue must be available.

Animal studies are conducted at high doses in order to provide statistical power, the highest dose being one that is minimally toxic (maximum tolerated dose). Consequently, the question often arises whether a carcinogenic effect at the highest dose may be a consequence of cell killing with compensatory cell replication or of general physiological disruption, rather than inherent carcinogenicity of the tested agent. There is little doubt that this may happen in some cases, but skepticism exists among some scientists that it is a pervasive problem (Ames and Gold, 1990; Melnick et al., 1993a; Melnick et al., 1993b; Barrett, 1993). In light of this question, the default assumption is that effects seen at the highest dose tested are appropriate for assessment, but it is necessary that the experimental conditions be scrutinized. If adequate data demonstrate that the effects are solely the result of excessive toxicity rather than carcinogenicity of the tested agent per se, then the effects may be regarded as not appropriate to include in assessment of the potential for human carcinogenicity of the agent. This is a matter of expert judgment, considering all of the data available about the agent including effects in other toxicity studies, structure-activity relationships, and effects on growth control and differentiation.

When cancer effects are not found in well-conducted animal cancer studies in two or more appropriate species and other information does not support the carcinogenic potential of the agent, these data provide a basis for concluding that the agent is not likely to possess human carcinogenic potential, in the absence of human data to the contrary. This default assumption about lack of cancer effects is not public health conservative. For instance, the tested animal species may not be predictive of effects in humans; arsenic shows only minimal or no effect in animals, while it is clearly positive in humans. (Other information, such as absence of mutagenic activity or absence of carcinogenic activity among structural analogues, can increase the confidence that negative results in animal studies indicate a lack of human hazard.) Also, it is recognized that animal studies (and epidemiologic studies as well) have very low power to detect cancer effects. Detection of a 10 percent tumor incidence is generally the limit of power with currently conducted animal studies (with the exception of rare tumors that are virtually markers for a particular agent, e.g., angiosarcoma caused by vinyl chloride).

Target organs of carcinogenesis for agents that cause cancer in both animals and humans are most often concordant at one or more sites (Tomatis et al., 1989; Huff, 1994). However, concordance by site is not uniform. The default assumption is that target organ concordance is not a prerequisite for evaluating the implications of animal study results for humans. This is a public health conservative science policy. The mechanisms of control of cell growth and differentiation are concordant among species, but there are marked differences among species in the way control is managed in various tissues. For example, in humans, mutation of the tumor suppressor gene is one of the most frequently observed genetic changes in tumors. This tumor suppressor is also observed to be operating in some rodent tissues, but other growth control mechanisms predominate in rodents. Thus, an animal response may be due to changes in a control that are relevant to humans, but appear in animals in a different way. However, it is appropriate under these guidelines to consider the influences of route of exposure, metabolism, and, particularly, hormonal modes of action that may either support or not support target organ concordance between animals and humans. When data allow, these influences are considered in deciding whether the default remains appropriate in individual instances (NRC, 1994, p. 121). An exception to the basic default of not assuming site concordance exists in the context of toxicokinetic modeling. Site concordance is inherently assumed when these models are used to estimate delivered dose in humans based on animal data.

As in the approach of the National Toxicology Program and the International Agency for Research on Cancer, the default is to include benign tumors observed in animal studies in the assessment of animal tumor incidence if they have the capacity to progress to the malignancies with which they are associated. This treats the benign and malignant tumors as representative of related responses to the test agent, which is scientifically appropriate. This is a science policy decision that is somewhat more conservative of public health than not including benign tumors in the assessment. Nonetheless, in assessing findings from animal studies, a greater proportion of malignancy is weighed more heavily than a response with a greater proportion of benign tumors. Greater frequency of malignancy of a particular tumor type in comparison with other tumor responses observed in an animal study is also a factor to be considered in selecting the response to be used in dose response assessment.

Benign tumors that are not observed to progress to malignancy are assessed on a case-by-case basis. There is a range of possibilities for their overall significance. They may deserve attention because they are serious health problems even though they are not malignant; for instance, benign tumors may be a health risk because of their effect on the function of a target tissue such as the brain. They may be significant indicators of the need for further testing of an agent if they are observed in a short term test protocol, or such an observation may add to the overall weight of evidence if the same agent causes malignancies in a long term study. Knowledge of the mode of action associated with a benign tumor response may aid in the interpretation of other tumor responses associated with the same agent. In other cases, observation of a benign tumor response alone may have no significant health hazard implications when other sources of evidence show no suggestion of carcinogenicity.

1.3.2.3. *How Do Metabolic Pathways Relate Across Species?* The default assumption is that there is a similarity of the basic pathways of metabolism and the occurrence of metabolites in tissues in regard to the species-to-species extrapolation of cancer hazard and risk. If comparative metabolism studies were to show no similarity between the tested species and humans and a metabolite(s) were the active form, there would be less support for an inference that the animal response(s) relates to humans. In other cases, parameters of metabolism may vary quantitatively between species; this becomes part of deciding on an appropriate human equivalent dose based on animal studies, optimally in the context of a toxicokinetic model.

1.3.2.4. *How Do Toxicokinetic Processes Relate Across Species?* A major issue is how to estimate human equivalent doses in extrapolating from animal studies. As a default for oral exposure, a human equivalent dose is estimated from data on another species by an adjustment of animal oral dose by a scaling factor of body weight to the 0.75 power. This adjustment factor is used because it represents scaling of metabolic rate across animals of different size. Because the factor adjusts for a parameter that can be improved on and brought into more sophisticated toxicokinetic modeling, when such data become available, the default assumption of 0.75 power can be refined or replaced.

For inhalation exposure, a human equivalent dose is estimated by default methodologies that provide estimates of lung deposition and of internal dose. The methodologies can be refined to more sophisticated forms with data on toxicokinetic and metabolic parameters of the specific agent. This default assumption, like the one with oral exposure, is selected in part because it lays a foundation for incorporating better data. The use of information to improve dose estimation from applied, to internal, to delivered dose is encouraged, including use of toxicokinetic modeling instead of any default, where data are available. Health conservatism is not an element in choosing the default.

For a route-to-route of exposure extrapolation, the default assumption is that an agent that causes internal tumors by one route of exposure will be carcinogenic by another route if it is absorbed by the second route to give an internal dose. This is a qualitative assumption and is considered to be public health conservative. The rationale is that for internal tumors an internal dose is significant no matter what the route of exposure. Additionally, the metabolism of the agent will be qualitatively the same for an internal dose. The issue of quantitative extrapolation of the dose-response relationship from one route to another is addressed case by case. Quantitative extrapolation is complicated by considerations such as first-pass metabolism, but is approachable with empirical data. Adequate data are necessary to demonstrate that an agent will act differently by one route versus another route of exposure.

1.3.2.5. *What Is the Correlation of the Observed Dose Response Relationship to the Relationship at Lower Doses?* The overriding preferred approach is to use a biologically based or case-specific model for both the observed range and extrapolation below that range when there are sufficient data. While biologically based models are still under development, it is likely that they will be used more frequently in the future. The default procedure for the observed range of data, when the preferred approach cannot be used, is to use a curve-fitting model.

In the absence of data supporting a biologically based or case-specific model for extrapolation outside of the observed range, the choice of approach is based on the view of mode of action of the agent arrived at in the hazard assessment. A linear default approach is used when the mode of action information is supportive of linearity or, alternatively, is insufficient to support a nonlinear mode of action. The linear approach is used when a view of the mode of action indicates a linear response, for example, when a conclusion is made that an agent directly causes alterations in DNA, a kind of interaction that not only theoretically requires one reaction, but also is likely to be additive to ongoing, spontaneous gene mutation. Other kinds of activity may have linear implications, e.g., linear rate-limiting steps, that support a linear procedure also. The linear approach is to draw a straight line between a point of departure from observed data, generally, as a default, the $LED_{10}$, and the origin (zero dose, zero response). Other points of departure may be more appropriate for certain data sets; these may be used instead of the $LED_{10}$. This approach is generally considered to be public health conservative. The $LED_{10}$ is the lower 95 percent limit on a dose that is estimated to cause a 10 percent response. This level is chosen to account (conservatively) for experimental variability. Additionally, it is chosen because it rewards experiments with better designs in regard to number of doses and dose spacing, since these generally will have narrower confidence limits. It is also an appropriate representative of the lower end of the observed range because the limit of detection of studies of tumor effect is about 10 percent.

The linear default is thought to generally produce an upper bound on potential risk at low doses, e.g., a 1/100,000 to 1/1,000,000 risk; the straight line approach gives numerical results about the same as a linearized multistage procedure (Krewski et al., 1984). This upper bound is thought to cover the range of human variability although, in some cases, it may not completely do so (Bois et al., 1995). The EPA considers the linear default to be inherently conservative of public health, without addition of another factor for human variability. In any case, the size of such a factor would be hard to determine since a good empirical basis on which to construct an estimate does not currently exist. The question of what may be the actual variability in human sensitivity is one that the 1994 NRC report discussed as did the 1993 NRC report on pesticides in children and infants. The NRC has recommended research on the question, and the EPA and other agencies have begun such research.

When adequate data on mode of action show that linearity is not the most reasonable working judgment and provide sufficient evidence to support a nonlinear mode of action, the default changes to a different approach—a margin of exposure analysis—which assumes that nonlinearity is more reasonable. The departure point is again generally the $LED_{10}$. A margin of exposure analysis compares the $LED_{10}$ with the dose associated with the environmental exposure(s) of interest by computing the ratio between the two.

The purpose of a margin of exposure analysis is to provide the risk manager with all available information on how much reduction in risk may be associated with reduction in exposure from the point of departure. This is to support the risk manager's decision as to what constitutes an acceptable margin of exposure, given requirements of the statute under which the decision is being made. There are several factors to be considered. (For perspective, keep in mind that a sufficient basis to support this nonlinear procedure often will include data on responses that are precursors to tumor effects. This means that the point of departure may well be from these biological response data rather than tumor incidence data, e.g., hormone levels, mitogenic effects.) One factor to consider is the slope of the dose response curve at the point of departure. A steeper slope implies an apparent greater reduction in risk as exposure decreases. This may support a smaller margin of exposure. Conversely, a shallow slope may support use of a greater margin of exposure. A second factor is the nature of the response used in the assessment—A precursor effect or frank toxicity or tumor response. The latter two may support a greater margin of exposure. A third factor is the nature and extent of human variability in sensitivity to the phenomenon. A fourth factor is the agent's persistence in the body. Greater variability or persistence argue for greater margins of exposure. A fifth factor is human sensitivity to the phenomenon as compared with experimental animals. The size of the margin of exposure that is acceptable would increase or decrease as this factor increases or decreases. If human variability cannot be estimated based on data, it should be considered to be at least 10-fold. Similarly, if comparison of species sensitivities cannot be estimated from available data, humans can be considered to be 10-fold more sensitive. If it is found that humans are less sensitive than animals a factor that is a fraction no smaller than 1/10 may be assumed. The 10-fold factors are moderately conservative, traditional ones used for decades in the assessment of toxicological effects. It should not be assumed that the numerical factors are the sole components for determination of an acceptable margin of exposure. Each case calls for individual judgment. It should be noted that for cancer assessment the margin of exposure analysis begins from a point of departure that is adjusted for toxicokinetic differences between species to give a human equivalent dose. Since the traditional factor for interspecies difference is thought to contain a measure for toxicokinetics as well as sensitivity to effect, the result of beginning with a human equivalent dose is to add some conservatism. The ultimate judgment whether a particular margin of exposure is acceptable is a risk management decision under applicable law, rather than being inherent in the risk assessment. Nonetheless, the risk assessor is responsible for providing scientific rationale to support the the decision.

When the mode of action information indicates that the dose response may be adequately described by both a linear and a nonlinear approach, then the default is to present both the linear and margin of exposure analyses. An assessment may use both linear and nonlinear approaches either for responses that are thought to result from different modes of action or for presenting considerations for a response that appears to be very different at high and low doses due to influence of separate modes of action. Also, separate approaches may be used for different induced responses (i.e. tumor types) from the same agent. These would also be carried forward and presented in the assessment. Figure 1–1 presents the decision points in deciding on a dose response approach or approaches.

| | | | | | |
|---|---|---|---|---|---|
| Data to support: | | | | | |
| Biologically based or case-specific model. | yes | no | no | no | no |
| Linearity | | yes | no | yes | no |
| Nonlinearity | | no | yes | yes | no |
| Extrapolation used | model | default—linear | default—nonlinear | default—linear and nonlinear | default—linear |

FIGURE 1–1. Decisions on Dose Response Assessment Approaches for the Range of Extrapolation

A default assumption is made that cumulative dose received over a lifetime, expressed as a lifetime average daily dose, is an appropriate measure of dose. This assumes that a high dose of such an agent received over a shorter period of time is equivalent to a low dose spread over a lifetime. This is thought to be a relatively public health conservative assumption and has empirical support (Monro, 1992). An example of effects of short-term, high exposure that results in subsequent cancer development is treatment of cancer patients with certain chemotherapeutic agents. An example of cancer from long-term exposure to an agent of relatively low potency is smoking. Whether the cumulative dose measure is exactly the correct measure in both such instances is not certain and should be assessed case by case and altered when data are available to support another approach. Other measures of dose that consider dose rate and duration are appropriate, e.g., when an agent acts by causing cell toxicity or hormone disruption. In these cases both agent concentration and duration are likely to be important, because such effects are generally observed to be reversible at cessation of short-term exposure.

### *1.4. Characterizations*

The risk characterization process first summarizes findings on hazard, dose response, and exposure characterizations, then develops an integrative analysis of the whole risk case. It ends in a nontechnical Risk Characterization Summary. The Risk Characterization Summary is a presentation for risk managers who may or may not be familiar with the scientific details of cancer assessment. It also provides information for other interested readers. The initial steps in the risk characterization process are to make building blocks in the form of characterizations of the assessments of hazard, dose response, and exposure. The individual assessments and characterizations are then integrated to arrive at risk estimates for exposure scenarios of interest. There are two reasons for individually characterizing the hazard, dose response, and exposure assessments. One is that they are often done by different people than those who do the integrative analyses. The second is that there is very often a lapse of time between the conduct of hazard and dose response analyses and the conduct of exposure assessment and integrative analysis. Thus, it is necessary to capture characterizations of assessments as the assessments are done to avoid the need to go back and reconstruct them. Figure 1–2 shows the relationships of analyses. The figure does not necessarily correspond to the number of documents involved; there may be one or several. "Integrative analysis" is a generic term. At EPA, the documents of various programs that contain integrative analyses have other names such as the "Staff Paper" that discusses air quality criteria issues. In the following sections, the elements of this figure are discussed.

CHARACTERIZATIONS

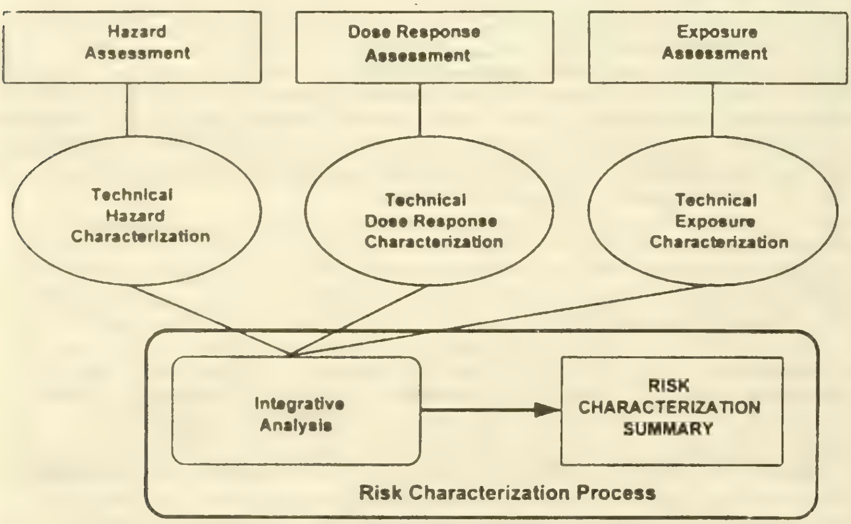
Hazard Assessment
Dose Response Assessment
Exposure Assessment
Technical Hazard Characterization
Technical Dose Response Characterization
Technical Exposure Characterization
Integrative Analysis
RISK CHARACTERIZATION SUMMARY
Risk Characterization Process

FIGURE 1–2. Risk Characterization

## 2. Hazard Assessment

### *2.1. Overview of Hazard Assessment and Characterization*

#### 2.1.1. Analyses of Data

The purpose of hazard assessment is to review and evaluate data pertinent to two questions: (1) whether an agent may pose a carcinogenic hazard to human beings and (2) under what circumstances an identified hazard may be expressed (NRC, 1994, p. 142). Hazard assessment is composed of analyses of a variety of data that may range from observations of tumor responses to analysis of structure-activity relationships. The purpose of the assessment is not simply to assemble these separate evaluations; its purpose is to construct a total case analysis examining the biological story the data reveal as a whole about carcinogenic effects, mode of action, and implications of these for human hazard and dose response evaluation. Weight of evidence conclusions come from the combined strength and coherence of inferences appropriately drawn from all of the available evidence. To the extent that data permit, hazard assessment addresses the mode of action question as both an initial step in considering appropriate approaches to dose response assessment and as a part of identifying human hazard potential.

The topics in this section include analysis of tumor data, both animal and human, and analysis of other key information about properties and effects that relate to carcinogenic potential. The section addresses how information can be used to evaluate potential modes of action. It also provides guidance on performing a weight of evidence evaluation.

#### 2.1.2. Cross-Cutting Topics for Data Integration

Two topics are included in the analysis of each kind of available data: first, gathering information from available data about the conditions of expression of hazard and second, gathering perspectives on the agent's potential mode of action.

2.1.2.1. *Conditions of Expression*. Information on the significance of the route of exposure may be available from human or animal studies on the agent itself or on structural analogues. This information may be found in studies of the agent or analogue for toxicological endpoints other than cancer under acute or subchronic or chronic exposure regimens. Studies of metabolism or toxicokinetics of the agent similarly may provide pertinent data.

Each kind of data is also examined for information on conditions that affect expression of carcinogenic effect such as presence or absence of metabolic pathways. If carcinogenicity is secondary to another toxic effect, the physiological or tissue changes that mark the other toxicity are examined. Comparison of metabolic processes and toxicity processes in humans and animals also bears on the relevance of animal responses to human hazard. Included in the examination are the questions of the potential range of human variability and whether any special sensitivity may occur because of age, sex, preexisting disease, or other condition.

2.1.2.2. *Mode of Action*. Information on an agent's potential mode(s) of action is important in considering the relevance of animal effects to assessment of human hazard. It also plays an important role in selecting dose response approach(es), which are generally either biologically based models or case-specific models incorporating mode of action data or default procedures based on more limited data that support inferences about the likely shape of the dose response curve.

Each kind of data may provide some insight about mode of action and insights are gathered from each to be considered together as discussed in section 2.4. In Appendix C, is a background discussion of some of the development of views about carcinogenic processes.

2.1.3. *Presentation of Results*. Presentation of the results of hazard assessment follows Agency guidance as discussed in section 2.7. The results are presented in a technical hazard characterization that serves as a support to later risk characterization. It includes:

—a summary of the evaluations of hazard data,
—the rationales for its conclusions, and
—an explanation of the significant strengths or limitations of the conclusions.

Another presentation feature is the use of a weight of evidence narrative that includes both a conclusion about the weight of evidence of carcinogenic potential and a summary of the data on which the conclusion rests. This narrative is a brief summary that replaces the alphanumerical classification system used in EPA's previous guidelines.

### *2.2. Analysis of Tumor Data*

Evidence of carcinogenicity comes from finding tumor increases in humans or laboratory animals exposed to a given agent, or from finding tumors following exposure to structural analogues to the compound under review. The significance of observed or anticipated tumor effects is evaluated in reference to all of the other key data on the agent. This section contains guidance for analyzing human and animal studies to decide whether there is an association between exposure to an agent or a structural analogue and occurrence of tumors. Note that the use of the term "tumor" here is generic, meaning malignant neoplasms or a combination of malignant and corresponding benign neoplasms.

Observation of only benign neoplasias may or may not have significance. Benign tumors that are not observed to progress to malignancy are assessed on a case-by-case basis. There is a range of possibilities for their overall significance. They may deserve attention because they are serious health problems even though they are not malignant; for instance, benign tumors may be a health risk because of their effect on the function of a target tissue such as the brain. They may be significant indicators of the need for further testing of an agent if they are observed in a short term test protocol, or such an observation may add to the overall weight of evidence if the same agent causes malignancies in a long term study. Knowledge of the mode of action associated with a benign tumor response may aid in the interpretation of other tumor responses associated with the same agent. In other cases, observation of a benign tumor response alone may have no significant health hazard implications when other sources of evidence show no suggestion of carcinogenicity.

### 2.2.1. Human Data

Human data may come from epidemiologic studies or case reports. Epidemiology is the study of the distributions and causes of disease within human populations. The goals of cancer epidemiology are to identify differences in cancer risk between different groups in a population or between different populations, and then to determine the extent to which these differences in risk can be attributed causally to specific exposures to exogenous or endogenous factors. Epidemiologic data are extremely useful in risk assessment because they provide direct evidence that a substance produces cancer in humans, thereby avoiding the problem of species to species inference. Thus, when available human data are extensive and of good quality, they are generally preferable over animal data and should be given greater weight in hazard characterization and dose response assessment, although both are utilized.

Null results from a single epidemiologic study cannot prove the absence of carcinogenic effects because they can arise either from being truly negative or from inadequate statistical power, inadequate design, imprecise estimates, or confounding factors. However, null results from a well-designed and well-conducted epidemiologic study that contains usable exposure data can help to define upper limits for the estimated dose of concern for human exposure if the overall weight of the evidence indicates that the agent is potentially carcinogenic in humans.

Epidemiology can also complement experimental evidence in corroborating or clarifying the carcinogenic potential of the agent in question. For example, observations from epidemiologic studies that elevated cancer incidence occurs at sites corresponding to those at which laboratory animals experience increased tumor incidence can strengthen the weight of evidence of human carcinogenicity. On the other hand, strong nonpositive epidemiologic data alone or in conjunction with compelling mechanistic information can lend support to a conclusion that animal responses may not be predictive of a human response. Furthermore, the advent of biochemical or molecular epidemiology may help improve understanding of the mechanisms of human carcinogenesis.

2.2.1.1. *Types of Studies*. The major types of cancer epidemiologic studies are analytical epidemiologic studies and descriptive or correlation epidemiologic studies. Each study type has well-known strengths and weaknesses that affect interpretation of study results as summarized below (Kelsey et al., 1986; Lilienfeld and Lilienfeld, 1979; Mausner and Kramer, 1985; Rothman, 1986).

Analytical epidemiologic studies are most useful for identifying an association between human exposure and adverse health effects. Analytical study designs include case-control studies and cohort studies. In case-control studies, groups of individuals with (cases) and without (controls) a particular disease are identified and compared to determine differences in exposure. In cohort studies, a group of "exposed" and "nonexposed" individuals are identified and studied over time to determine differences in disease occurrence. Cohort studies can either be performed prospectively or retrospectively from historical records.

Descriptive or correlation epidemiologic studies (sometimes called ecological studies) examine differences in disease rates among populations in relation to age, gender, race, and differences in temporal or environmental conditions. In general, these studies can only identify patterns or trends in disease occurrence over time or in different geographical locations but cannot ascertain the causal agent or degree of exposure. These studies, however, are often very useful for generating hypotheses for further research.

Biochemical or molecular epidemiologic studies are studies in which laboratory methods are incorporated in analytical investigations. The application of techniques for measuring cellular and molecular alterations due to exposure to specific environmental agents may allow conclusions to be drawn about the mechanisms of carcinogenesis. The use of biological biomarkers in epidemiology may improve assessment of exposure and internal dose.

Case reports describe a particular effect in an individual or group of individuals who were exposed to a substance. These reports are often anecdotal or highly selected in nature and are of limited use for hazard assessment. However, reports of cancer cases can identify associations particularly when there are unique features such as an association with an uncommon tumor (e.g., vinyl chloride and angiosarcoma or diethylstilbestrol and clear-cell carcinoma of the vagina).

2.2.1.2. *Criteria for Assessing Adequacy of Epidemiologic Studies.* Criteria for assessing the adequacy of epidemiologic studies are well recognized. Characteristics that are desirable in these studies include (1) clear articulation of study objectives or hypothesis, (2) proper selection and characterization of the exposed and control groups, (3) adequate characterization of exposure, (4) sufficient length of follow-up for disease occurrence, (5) valid ascertainment of the causes of cancer morbidity and mortality, (6) proper consideration of bias and confounding factors, (7) adequate sample size to detect an effect, (8) clear, well-documented, and appropriate methodology for data collection and analysis, (9) adequate response rate and methodology for handling missing data, and (10) complete and clear documentation of results. Ideally, these conditions should be satisfied, where appropriate, but rarely can a study meet all of them. No single criterion determines the overall adequacy of a study. The following discussions highlight the major factors included in an analysis of epidemiologic studies.

Population Issues. The ideal comparison would be between two populations that differ only in exposure to the agent in question. Because this is seldom the case, it is important to identify sources of bias inherent in a study's design or data collection methods. Bias can arise from several sources, including noncomparability between populations of factors such as general health (McMichael, 1976), diet, lifestyle, or geographic location; differences in the way case and control individuals recall past events; differences in data collection that result in unequal ascertainment of health effects in the populations; and unequal follow-up of individuals. Both acceptance of studies for assessment and judgment of their strengths or weaknesses depend on identifying their sources of bias and the effects on study results.

Exposure Issues. For epidemiologic data to be useful in determining whether there is an association between health effects and exposure to an agent, there must be adequate characterization of exposure information. In general, greater weight should be given to studies with more precise and specific exposure estimates.

Questions to address about exposure are: What can one reliably conclude about the level, duration, route, and frequency of exposure of individuals in one population as compared with another? How sensitive are study results to uncertainties in these parameters?

Actual exposure measurements are not available for many retrospective studies. Therefore, surrogates are often used to reconstruct exposure parameters when historical measurements are not available. These may involve attributing exposures to job classifications in a workplace or to broader occupational or geographic groupings. Use of surrogates carries a potential for misclassification in that individuals may be placed in the incorrect exposure group. Misclassification generally leads to reduced ability of a study to detect differences between study and referent populations.

When either current or historical monitoring data are available, the exposure evaluation includes consideration of the error bounds of the monitoring and analytic methods and whether the data are from routine or accidental exposures. The potentials for misclassification and measurement errors are amenable to both qualitative and quantitative analysis. These are essential analyses for judging a study's results because exposure estimation is the most critical part of a retrospective study.

Biological markers potentially offer excellent measures of exposure (Hulka and Margolin, 1992; Peto and Darby, 1994). Validated markers of exposure such as alkylated hemoglobin from exposure to ethylene oxide (van Sittert et al., 1985) or urinary arsenic (Enterline et al., 1987) can greatly improve estimates of dose. Markers closely identified with effects promise to greatly increase the ability of studies to distinguish real effects from bias at low levels of relative risk between populations (Taylor et al., 1994; Biggs et al., 1993) and to resolve problems of confounding risk factors.

Confounding Factors. Because epidemiologic studies are mostly observational, it is not possible to guarantee the control of confounding variables, which may affect the study outcome. A confounding variable is a risk factor, independent of the putative agent, that is distributed unequally among the exposed and unexposed populations (e.g., smoking habits, lifestyle). Adjustment for possible confounding factors can occur either in the design of the study (e.g., matching on critical factors) or in the statistical analysis of the results. The influence of a potential confounding factor is limited by the effect of the exposure of interest. For example, a twofold effect of an exposure requires that the confounder effect be at least as big. The latter may not be possible due to the presentation of the data or because needed information was not collected during the study. In this case, indirect comparisons may be possible. For example, in the absence of data on smoking status among individuals in the study population, an examination of the possible contribution of cigarette smoking to increased lung cancer risk may be based on information from other sources such as the American Cancer Society's longitudinal studies (Hammand, 1966; Garfinkel and Silverberg, 1991). The effectiveness of adjustments contributes to the ability to draw inferences from a study.

Different studies involving exposure to an agent may have different confounding factors. If consistent increases in cancer risk are observed across a collection of studies with different confounding factors, the inference that the agent under investigation was the etiologic factor is strengthened, even though complete adjustment for confounding factors cannot be made and no single study supports a strong inference.

It also may be the case that the agent of interest is a risk factor in conjunction with another agent. This relationship may be revealed in a collection of studies such as in the case of asbestos exposure and smoking.

Sensitivity. Sensitivity, or the ability of a study to detect real effects, is a function of several factors. Greater size of the study population(s) (sample size) increases sensitivity, as does greater exposure (levels and duration) of the population members. Because of the often long latency period in cancer development, sensitivity also depends on whether adequate time has elapsed since exposure began for effects to occur. A unique feature that can be ascribed to the effects of a particular agent (such as a tumor type that is seen only rarely in the absence of the agent) can increase sensitivity by permitting separation of bias and confounding factors from real effects. Similarly, a biomarker particular to the agent can permit these distinctions. Statistical reanalyses of data, particularly an examination of different exposure indices, can give insight on potential exposure-response relationships. These are all factors to explore in statistical analysis of the data.

Statistical Considerations. The analysis applies appropriate statistical methods to ascertain whether or not there is any significant association between exposure and effects. A description of the method or methods should include the reasons for their selection. Statistical analyses of the potential effects of bias or confounding factors are part of addressing the significance of an association, or lack of one, and whether a study is able to detect any effect.

The analysis augments examination of the results for the whole population with exploration of the results for groups with comparatively greater exposure or time since first exposure. This may support identifying an association or establishing a dose response trend. When studies show no association, such exploration may apply to determining an upper limit on potential human risk for consideration alongside results of animal tumor effects studies.

Combining Statistical Evidence Across Studies. Meta-analysis is a means of comparing and synthesizing studies dealing with similar health effects and risk factors. It is intended to introduce consistency and comprehensiveness into what otherwise might be a more subjective review of the literature. When utilized appropriately, meta-analysis can enhance understanding of associations between sources and their effects that may not be apparent from examination of epidemiologic studies individually. Whether to conduct a meta-analysis depends on several issues. These include the importance of formally examining sources of heterogeneity, the refinement of the estimate of the magnitude of an effect, and the need for information beyond that provided by individual studies or a narrative review. Meta-analysis may not be useful in some circumstances. These include when the relationship between exposure and disease is obvious without a more formal analysis, when there are only a few studies of the key health outcomes, when there is insufficient information from available studies related to disease, risk estimate, or exposure classification, or when there are substantial confounding or other biases that cannot be adjusted for in the analysis (Blair et al., 1995; Greenland, 1987; Peto, 1992).

2.2.1.3. *Criteria for Causality.* A causal interpretation is enhanced for studies to the extent that they meet the criteria described below. None of the criteria is conclusive by itself, and the only criterion that is essential is the temporal relationship.

These criteria are modeled after those developed by Bradford Hill in the examination of cigarette smoking and lung cancer (Rothman, 1986) and they need to be interpreted in the light of all other information on the agent being assessed.

—*Temporal relationship:* The development of cancers require certain latency periods, and while latency periods vary, existence of such periods is generally acknowledged. Thus, the disease has to occur within a biologically reasonable time after initial exposure. This feature must be present if causality is to be considered.

—*Consistency:* Associations occur in several independent studies of a similar exposure in different populations, or associations occur consistently for different subgroups in the same study. This feature usually constitutes strong evidence for a causal interpretation when the same bias or confounding is not also duplicated across studies.

—*Magnitude of the association:* A causal relationship is more credible when the risk estimate is large and precise (narrow confidence intervals).

—*Biological gradient:* The risk ratio (i.e., the ratio of the risk of disease or death among the exposed to the risk of the unexposed) increases with increasing exposure or dose. A strong dose response relationship across several categories of exposure, latency, and duration is supportive for causality given that confounding is unlikely to be correlated with exposure. The absence of a dose response relationship, however, is not by itself evidence against a causal relationship.

—*Specificity of the association:* The likelihood of a causal interpretation is increased if an exposure produces a specific effect (one or more tumor types also found in other studies) or if a given effect has a unique exposure.

—*Biological plausibility:* The association makes sense in terms of biological knowledge. Information is considered from animal toxicology, toxicokinetics, structure-activity relationship analysis, and short-term studies of the agent's influence on events in the carcinogenic process considered.

—*Coherence:* The cause-and-effect interpretation is in logical agreement with what is known about the natural history and biology of the disease, i.e., the entire body of knowledge about the agent.

2.2.1.4. *Assessment of Evidence of Carcinogenicity from Human Data.* In the evaluation of carcinogenicity based on epidemiologic studies, it is necessary to critically evaluate each study for the confidence in findings and conclusions as discussed under section 2.2.1.2. All studies that are properly conducted, whether yielding positive or null results, or even suggesting protective carcinogenic effects, should be considered in assessing the totality of the human evidence. Although a single study may be indicative of a cause-effect relationship, confidence in inferring a causal relationship is increased when several independent studies are concordant in showing the association, when the association is strong, and when other criteria for causality are also met. Conclusions about the overall evidence for carcinogenicity from available studies in humans should be summarized along with a discussion of strengths or limitations of the conclusions.

### 2.2.2. Animal Data

Various kinds of whole animal test systems are currently used or are under development for evaluating potential carcinogenicity. Cancer studies involving chronic exposure for most of the life span of an animal are generally accepted for evaluation of tumor effects (Tomatis et al., 1989; Rall, 1991; Allen et al., 1988; but see Ames and Gold, 1990). Other studies of special design are useful for observing formation of preneoplastic lesions or tumors or investigating specific modes of action.

2.2.2.1. *Long-Term Carcinogenicity Studies.* The objective of long-term carcinogenesis bioassays is to determine the carcinogenic potential and dose response relationships of the test agent. Long-term rodent studies are designed to examine the production of tumors as well as preneoplastic lesions and other indications of chronic toxicity that may provide evidence of treatment-related effects and insights into the way the test agent produces tumors. Current standardized long-term studies in rodents test at least 50 animals per sex per dose group in each of three treatment groups and in a concurrent control group, usually for 18 to 24 months, depending on the rodent species tested (OECD, 1981; U.S. EPA, 1983a; U.S. EPA, 1983b; U.S. EPA, 1983c). The high dose in long-term studies is generally selected to provide the maximum ability to detect treatment-related carcinogenic effects while not compromising the outcome of the study due to excessive toxicity or inducing inappropriate toxicokinetics (e.g., overwhelming detoxification or absorption mechanisms). The purpose of two or more lower doses is to provide some information on the shape of the dose response curve. Similar protocols have been and continue to be used by many laboratories worldwide.

All available studies of tumor effects in whole animals are considered, at least preliminarily. The analysis discards studies judged to be wholly inadequate in protocol, conduct, or results. Criteria for the technical adequacy of animal carcinogenicity studies have been published and should be used as guidance to judge the acceptability of individual studies (NTP, 1984; OSTP, 1985). Care is taken to include studies that provide some evidence bearing on carcinogenicity or help interpret effects noted in other studies even if they have some limitations of protocol or conduct. Such limited, but not wholly inadequate, studies can contribute as their deficiencies permit. The findings of long-term rodent bioassays are always interpreted in conjunction with results of prechronic studies along with toxicokinetic and metabolism studies and other pertinent information, if available. Evaluation of tumor effects requires consideration of both biological and statistical significance of the findings (Haseman, 1984, 1985, 1990, 1995). The following sections highlight the major issues in the evaluation of long-term carcinogenicity studies.

Dosing issues. In order to obtain the most relevant information from a long-term carcinogenicity study, it is important to require maximization of exposure to the test material. At the same time, there is a need for caution in using excessive high dose levels that would confound the interpretation of study results to humans. The high dose is conventionally defined as a dose that produces some toxic effects without either unduly affecting mortality from effects other than cancer or producing significant adverse effects on the nutrition and health of the test animals (OECD, 1981; NRC, 1993b). It should be noted that practical upper limits have been established to avoid the use of excessive high doses in long-term carcinogenicity studies (e.g., 5 percent of the test substance in the feed for dietary studies [OECD, 1981]).

Evaluating the appropriateness of the high dose in carcinogenicity studies is based on scientific judgment using all available relevant information. In general, if the test agent does not appear to cause any specific target organ toxicity or perturbation of physiological function, an adequate high dose would be a dose that causes no more than 10 percent reduction of body weight gain over the life span of the animals. On the other hand, significant increases in mortality from effects other than cancer is accepted as clear evidence of frank toxicity, which indicates that an adequate high dose may have been exceeded. Other signs of treatment-related toxicity that may indicate that an adequate high dose has been exceeded include the following: (a) Reduction of body weight gain of 10 percent or greater, (b) significant increases in abnormal behavioral and clinical signs, (c) significant changes in hematology or clinical chemistry, (d) saturation of absorption and detoxification mechanisms, or (e) marked changes in organ weight, morphology, and histopathology.

For dietary studies, weight gain reductions should be evaluated as to whether there is a palatability problem or an issue with food efficiency; certainly, the latter is a toxic manifestation. In the case of inhalation studies with respirable particles, evidence of impairment of normal clearance of particles from the lung should be considered along with other signs of toxicity to the respiratory airways to determine whether the high exposure concentration has been appropriately selected. For dermal studies, evidence of skin irritation may indicate that an adequate high dose has been reached.

Interpretation of carcinogenicity study results is profoundly affected by exposure conditions, especially by inappropriate dose selection. This is particularly important in studies that are nonpositive for carcinogenicity, since failure to reach a sufficient dose reduces the sensitivity of a study. A lack of tumorigenic responses at exposure levels that cause significant impairment of animal survival may also not be acceptable as negative findings because of the reduced sensitivity of the study. On the other hand, overt toxicity or inappropriate toxicokinetics due to excessive high doses may result in tumor effects that are secondary to the toxicity rather than directly attributable to the agent.

There are several possible outcomes regarding the study interpretation of the significance and relevance of tumorigenic effects associated with exposure or dose levels below, at, or above an adequate high dose. General guidance is given here that should not be taken as prescriptive; for each case, the information at hand is evaluated and a rationale should be given for the position taken.

—*Adequate high dose:* If an adequate high dose has been utilized, tumor effects are judged positive or negative depending on the presence or absence of significant tumor incidence increases, respectively.

—*Excessive high dose:* If toxicity or mortality is excessive at the high dose, interpretation depends on the finding of tumors or not.

(a) Studies that show tumor effects only at excessive doses may be compromised and may or may not carry weight, depending on the interpretation in the context of other study results and other lines of evidence. Results of such studies, however, are generally not considered suitable for risk extrapolation.

(b) Studies that show tumors at lower doses, even though the high dose is excessive and may be discounted, should be evaluated on their own merits.

(c) If a study does not show an increase in tumor incidence at a toxic high dose and appropriately spaced lower doses are used without such toxicity or tumors, the study is generally judged as negative for carcinogenicity.

—*Inadequate high dose:* Studies of inadequate sensitivity where an adequate high dose has not been reached may be used to bound the dose range where carcinogenic effects might be expected.

Statistical Considerations. The main aim of statistical evaluation is to determine whether exposure to the test agent is associated with an increase of tumor development. Statistical analysis of a long-term study should be performed for each tumor type separately. The incidence of benign and malignant lesions of the same cell type, usually within a single tissue or organ, are considered separately and are combined when scientifically defensible (McConnell et al., 1986).

Trend tests and pairwise comparison tests are the recommended tests for determining whether chance, rather than a treatment-related effect, is a plausible explanation for an apparent increase in tumor incidence. A trend test such as the Cochran-Armitage test (Snedecor and Cochran, 1967) asks whether the results in all dose groups together increase as dose increases. A pairwise comparison test such as the Fisher exact test (Fisher, 1932) asks whether an incidence in one dose group is increased over the control group. By convention, for both tests a statistically significant comparison is one for which $p < 0.05$ that the increased incidence is due to chance. Significance in either kind of test is sufficient to reject the hypothesis that chance accounts for the result. A statistically significant response may or may not be biologically significant and vice versa. The selection of a significance level is a policy choice based on a trade-off between the risks of false positives and false negatives. A significance level of greater or less than 5 percent is examined to see if it confirms other scientific information. When the assessment departs from a simple 5 percent level, this should be highlighted in the risk characterization. A two-tailed test or a one-tailed test can be used. In either case a rationale is provided.

Considerations of multiple comparisons should also be taken into account. Haseman (1983) analyzes typical animal bioassays testing both sexes of two species and concludes that, because of multiple comparisons, a single tumor increase for a species-sex-site combination that is statistically significant at the 1 percent level for common tumors or 5 percent for rare tumors corresponds to a 7–8 percent significance level for the study as a whole. Therefore, animal bioassays presenting only one significant result that falls short of the 1 percent level for a common tumor may be treated with caution.

Concurrent and Historical Controls. The standard for determining statistical significance of tumor incidence comes from a comparison of tumors in dosed animals as compared with concurrent control animals. Additional insights about both statistical and biological significance can come from an examination of historical control data (Tarone, 1982; Haseman, 1995). Historical control data can add to the analysis particularly by enabling identification of uncommon tumor types or high spontaneous incidence of a tumor in a given animal strain. Identification of common or uncommon situations prompts further thought about the meaning of the response in the current study in context with other observations in animal studies and with other evidence about the carcinogenic potential of the agent. These other sources of information may reinforce or weaken the significance given to the response in the hazard assessment. Caution should be exercised in simply looking at the ranges of historical responses because the range ignores differences in survival of animals among studies and is related to the number of studies in the database.

In analyzing results for uncommon tumors in a treated group that are not statistically significant in comparison to concurrent controls, the analyst can use the experience of historical controls to conclude that the result is in fact unlikely to be due to chance. In analyzing results for common tumors, a different set of considerations comes into play. Generally speaking, statistically significant increases in tumors should not be discounted simply because incidence rates in the treated groups are within the range of historical controls or because incidence rates in the concurrent controls are somewhat lower than average. Random assignment of animals to groups and proper statistical procedures provide assurance that statistically significant results are unlikely to be due to chance alone. However, caution should be used in interpreting results that are barely statistically significant or in which incidence rates in concurrent controls are unusually low in comparison with historical controls.

In cases where there may be reason to discount the biological relevance to humans of increases in common animal tumors, such considerations should be weighed on their own merits and clearly distinguished from statistical concerns.

When historical control data are used, the discussion needs to address several issues that affect comparability of historical and concurrent control data. Among these issues are the following: genetic drift in the laboratory strains; differences in pathology examination at different times and in different laboratories (e.g., in criteria for evaluating lesions; variations in the techniques for preparation or reading of tissue samples among laboratories); comparability of animals from different suppliers. The most relevant historical data come from the same laboratory and same supplier, gathered within 2 or 3 years one way or the other of the study under review; other data should be used only with extreme caution.

Assessment of Evidence of Carcinogenicity from Long-Term Animal Studies. In general, observation of tumor effects under different circumstances lends support to the significance of the findings for animal carcinogenicity. Significance is a function of the number of factors present, and for a factor such as malignancy, the severity of the observed pathology. The following observations add significance to the tumor findings:

—uncommon tumor types
—tumors at multiple sites
—tumors by more than one route of administration
—tumors in multiple species, strains, or both sexes
—progression of lesions from preneoplastic to benign to malignant
—reduced latency of neoplastic lesions
—metastases
—unusual magnitude of tumor response
—proportion of malignant tumors
—dose-related increases

These guidelines adopt the science policy position that tumor findings in animals indicate that an agent may produce such effects in humans. Moreover, the absence of tumor findings in well-conducted, long-term animal studies in at least two species provides reasonable assurance that an agent may not be a carcinogenic concern for humans. Each of these is a default assumption that may be adopted, when appropriate, after evaluation of tumor data and other key evidence.

Site concordance of tumor effects between animals and humans is an issue to be considered in each case. Thus far, there is evidence that growth control mechanisms at the level of the cell are homologous among mammals, but there is no evidence that these mechanisms are site concordant. Moreover, agents observed to produce tumors in both humans and animals have produced tumors either at the same (e.g., vinyl chloride) or different sites (e.g., benzene) (NRC, 1994). Hence, site concordance is not assumed a priori. On the other hand, certain processes with consequences for particular tissue sites (e.g., disruption of thyroid function) may lead to an anticipation of site concordance.

2.2.2.2. *Other Studies.* Various intermediate-term studies often use protocols that screen for carcinogenic or preneoplastic effects, sometimes in a single tissue. Some involve the development of various proliferative lesions, like foci of alteration in the liver (Goldsworthy et al., 1986). Others use tumor endpoints, like the induction of lung adenomas in the sensitive strain A mouse (Maronpot et al., 1986) or tumor induction in initiation-promotion studies using various organs such as the bladder, intestine, liver, lung, mammary gland, and thyroid (Ito et al., 1992). In these tests, the selected tissue is, in a sense, the test system rather than the whole animal. Important information concerning the steps in the carcinogenic process and mode of action can be obtained from "start/stop" experiments. In these protocols, an agent is given for a period of time to induce particular lesions or effects, then stopped to evaluate the progression or reversibility of processes (Todd, 1986; Marsman and Popp, 1994).

Assays in genetically engineered rodents may provide insight into the chemical and gene interactions involved in carcinogenesis (Tennant et al., 1995a). These mechanistically based approaches involve activated oncogenes that are introduced (transgenic) or tumor suppressor genes that are deleted (knocked-out). If appropriate genes are selected, not only may these systems provide information on mechanisms, but the rodents typically show tumor development earlier than the standard bioassay. Transgenic mutagenesis assays also represent a mechanistic approach for assessing the mutagenic properties of agents as well as developing quantitative linkages between exposure, internal dose, and mutation related to tumor induction (Morrison and Ashby, 1994; Sisk et al., 1994; Hayward et al., 1995). These systems use a stable genomic integration of a lambda shuttle vector that carries a lacI target gene and a lacZ reporter gene.

The support that these studies give to a determination of carcinogenicity rests on their contribution to the consistency of other evidence about an agent. For instance, benzoyl peroxide has promoter activity on the skin, but the overall evidence may be less supportive (Kraus et al., 1995). These studies also may contribute information about mode of action. One needs to recognize the limitations of these experimental protocols such as short duration, limited histology, lack of complete development of tumors, or experimental manipulation of the carcinogenic process that may limit their contribution to the overall assessment. Generally, their results are appropriate as aids in the assessment for interpreting other toxicological evidence (e.g., rodent chronic bioassays), especially regarding potential modes of action. With sufficient validation, these studies may partially or wholly replace chronic bioassays in the future (Tennant et al., 1995).

#### 2.2.3. Structural Analogue Data

For some chemical classes, there is significant information available on the carcinogenicity of analogues, largely in rodent bioassays. Analogue effects are instructive in investigating carcinogenic potential of an agent as well as identifying potential target organs, exposures associated with effects, and potential functional class effects or modes of action. All appropriate studies are included and analyzed, whether indicative of a positive effect or not. Evaluation includes tests in various animal species, strains, and sexes; with different routes of administration; and at various doses, as data are available. Confidence in conclusions is a function of how similar the analogues are to the agent under review in structure, metabolism, and biological activity. This confidence needs to be considered to ensure a balanced position.

### *2.3. Analysis of Other Key Data*

The physical, chemical, and structural properties of an agent, as well as data on endpoints that are thought to be critical elements of the carcinogenic process, provide valuable insights into the likelihood of human cancer risk. The following sections provide guidance for analyses of these data.

#### 2.3.1. Physicochemical Properties

Physicochemical properties affect an agent's absorption, tissue distribution (bioavailability), biotransformation, and degradation in the body and are important determinants of hazard potential (and dose response analysis). Properties to analyze include, but are not limited to, the following: molecular weight, size, and shape; valence state; physical state (gas, liquid, solid); water or lipid solubility, which can influence retention and tissue distribution; and potential for chemical degradation or stabilization in the body.

An agent's potential for chemical reaction with cellular components, particularly with DNA and proteins, is also important. The agent's molecular size and shape, electrophilicity, and charge distribution are considered in order to decide whether they would facilitate such reactions.

#### 2.3.2. Structure-Activity Relationships

Structure-activity relationship (SAR) analyses and models can be used to predict molecular properties, surrogate biological endpoints, and carcinogenicity. Overall, these analyses provide valuable initial information on agents, which may strengthen or weaken the concern for an agent's carcinogenic potential.

Currently, SAR analysis is useful for chemicals and metabolites that are believed to initiate carcinogenesis through covalent interaction with DNA (i.e., DNA-reactive, mutagenic, electrophilic, or proelectrophilic chemicals) (Ashby and Tennant, 1991). For organic chemicals, the predictive capability of SAR analysis combined with other toxicity information has been demonstrated (Ashby and Tennant, 1994). The following parameters are useful in comparing an agent to its structural analogues and congeners that produce tumors and affect related biological processes such as receptor binding and activation, mutagenicity, and general toxicity (Woo and Arcos, 1989):

—nature and reactivity of the electrophilic moiety or moieties present,
—potential to form electrophilic reactive intermediate(s) through chemical, photochemical, or metabolic activation,
—contribution of the carrier molecule to which the electrophilic moiety(ies) is attached,
—physicochemical properties (e.g., physical state, solubility, octanol-water partition coefficient, half-life in aqueous solution),
—structural and substructural features (e.g., electronic, stearic, molecular geometric),
—metabolic pattern (e.g., metabolic pathways and activation and detoxification ratio), and
—possible exposure route(s) of the agent.

Suitable SAR analysis of non-DNA-reactive chemicals and of DNA-reactive chemicals that do not appear to bind covalently to DNA requires knowledge or postulation of the probable mode(s) of action of closely related carcinogenic structural analogues (e.g., receptor-mediated, cytotoxicity-related). Examination of the physicochemical and biochemical properties of the agent may then provide the rest of the information needed in order to make an assessment of the likelihood of the agent's activity by that mode of action.

### 2.3.3. Comparative Metabolism and Toxicokinetics

Studies of the absorption, distribution, biotransformation, and excretion of agents permit comparisons among species to assist in determining the implications of animal responses for human hazard assessment, supporting identification of active metabolites, identifying changes in distribution and metabolic pathway or pathways over a dose range, and making comparisons among different routes of exposure.

If extensive data are available (e.g., blood/tissue partition coefficients and pertinent physiological parameters of the species of interest), physiologically based pharmacokinetic models can be constructed to assist in a determination of tissue dosimetry, species-to-species extrapolation of dose, and route-to-route extrapolation (Connolly and Andersen, 1991; see section 3.2.2). If it is not contrary to available data, it is assumed as a default that toxicokinetic and metabolic processes are qualitatively comparable between species. Discussion of the defaults regarding quantitative comparison and their modifications appears in section 3.

The qualitative question of whether an agent is absorbed by a particular route of exposure is important for weight of evidence classification discussed in section 2.7.1. Decisions whether route of exposure is a limiting factor on expression of any hazard, in that absorption does not occur by a route, are based on studies in which effects of the agent, or its structural analogues, have been observed by different routes, on physical-chemical properties, or on toxicokinetics studies.

Adequate metabolism and pharmacokinetic data can be applied toward the following as data permit. Confidence in conclusions is enhanced when in vivo data are available.

—Identifying metabolites and reactive intermediates of metabolism and determining whether one or more of these intermediates are likely to be responsible for the observed effects. This information on the reactive intermediates will appropriately focus SAR analysis, analysis of potential modes of action, and estimation of internal dose in dose response assessment (D'Souza et al., 1987; Krewski et al., 1987).

—Identifying and comparing the relative activities of metabolic pathways in animals with those in humans. This analysis can provide insights for extrapolating results of animal studies to humans.

—Describing anticipated distribution within the body and possibly identifying target organs. Use of water solubility, molecular weight, and structure analysis can support qualitative inferences about anticipated distribution and excretion. In addition, describing whether the agent or metabolite of concern will be excreted rapidly or slowly or will be stored in a particular tissue or tissues to be mobilized later can identify issues in comparing species and formulating dose response assessment approaches.

—Identifying changes in toxicokinetics and metabolic pathways with increases in dose. These changes may result in important differences in disposition of the agent or its generation of active forms of the agent between high and low dose levels. These studies play an important role in providing a rationale for dose selection in carcinogenicity studies.

—Determining bioavailability via different routes of exposure by analyzing uptake processes under various exposure conditions. This analysis supports identification of hazards for untested routes. In addition, use of physicochemical data (e.g., octanol-water partition coefficient information) can support an inference about the likelihood of dermal absorption (Flynn, 1990).

In all of these areas, attempts are made to clarify and describe as much as possible the variability to be expected because of differences in species, sex, age, and route of exposure. The analysis takes into account the presence of subpopulations of individuals who are particularly vulnerable to the effects of an agent because of toxicokinetic or metabolic differences (genetically or environmentally determined) (Bois et al., 1995).

### 2.3.4. Toxicological and Clinical Findings

Toxicological findings in experimental animals and clinical observations in humans are an important resource to the cancer hazard assessment. Such findings provide information on physiological effects, effects on enzymes, hormones, and other important macromolecules as well as on target organs for toxicity. Given that the cancer process represents defects in terminal differentiation, growth control, and cell death, developmental studies of agents may provide an understanding of the activity of an agent that carries over to cancer assessment. Toxicity studies in animals by different routes of administration support comparison of absorption and metabolism by those routes. Data on human variability in standard clinical tests may provide insight into the range of human sensitivity and common mechanisms to agents that affect the tested parameters.

### 2.3.5. Mode of Action-Related Endpoints and Short-Term Tests

A myriad of biochemical and biological endpoints relevant to the carcinogenic process provide important information in determining whether a cancer hazard exists and include, but are not limited to, mutagenesis, inhibition of gap junctional intercellular communication, increased cell proliferation, inhibition of programmed cell death, receptor activation, and immunosuppression. These precursor effects are discussed below.

2.3.5.1. *Direct DNA Effects.* Because cancer is the result of multiple genetic defects in genes controlling proliferation and tissue homeostasis (Vogelstein et al., 1988), the ability of an agent to affect DNA is of obvious importance. It is well known that many carcinogens are electrophiles that interact directly with DNA, resulting in DNA damage and adducts, and subsequent mutations (referred to in these guidelines as direct DNA effects) that are thought to contribute to the carcinogenic process (Shelby and Zeiger, 1990; Tinwell and Ashby, 1991). Thus, studies of these phenomena continue to be important in the assessment of cancer hazard. The EPA has published testing guidelines for detecting the ability of agents to affect DNA or chromosomes (EPA, 1991a). Information on agents that induce mutations in animal germ cells also deserves attention; several human carcinogens have been shown to be positive in rodent tests for the induction of genetic damage in both somatic and germ cells (Shelby, 1995).

2.3.5.2. *Secondary DNA Effects.* Similarly of interest are secondary mechanisms that either increase mutation rates or the number of dividing cells. An increase in mutations might be due to cytotoxic exposures causing regenerative proliferation or mitogenic influences, either of which could result in clonal expansion of initiated cells (Cohen and Ellwein, 1990). An agent might interfere with the enzymes involved in DNA repair and recombination (Barrett and Lee, 1992). Also, programmed cell death (apoptosis) can potentially be blocked by an agent, thereby permitting replication of damaged cells. For example, peroxisome proliferators may act by suppressing apoptosis pathways (Shulte-Hermann *et al.,* 1993; Bayly *et al.,* 1994). An agent may also generate reactive oxygen species that produce oxidative damage to DNA and other important macromolecules that become important elements of the carcinogenic process (Kehrer, 1993; Clayson *et al.,* 1994; Chang *et al.,* 1988). Damage to certain critical DNA repair genes or other genes (e.g., the p53 gene) may result in genomic instability, which predisposes cells to further genetic alterations and increases the probability of neoplastic progression independent of any exogenous agent (Harris and Hollstein, 1993; Levine, 1994).

The loss or gain of chromosomes (i.e., aneuploidy) is an effect that can result in genomic instability (Fearon and Vogelstein, 1990; Cavenee *et al.,* 1986). Although the relationship between induced aneuploidy and carcinogenesis is not completely established, several carcinogens have been shown to induce aneuploidy (Gibson *et al.,* 1995; Barrett, 1992). Agents that cause aneuploidy interfere with the normal process of chromosome segregation and lead to chromosomal losses, gains, or aberrations by interacting with the proteins (e.g., microtubules) needed for chromosome movement.

2.3.5.3. *Nonmutagenic and Other Effects.* A failure to detect DNA damage and mutation induction in several test systems suggests that a carcinogenic agent may act by another mode of action.

It is possible for an agent to alter gene expression (transcriptional, translational, or post-translational modifications) by means not involving mutations (Barrett, 1995). For example, perturbation of DNA methylation patterns may cause effects that contribute to carcinogenesis (Jones, 1986; Goodman and Counts, 1993; Holliday, 1987). Overexpression of genes by amplification has been observed in certain tumors (Vainio *et al.,* 1992). Other mechanisms may involve cellular reprogramming through hormonal mechanisms or receptor-mediated mechanisms (Ashby *et al.,* 1994; Barrett, 1992).

Gap-junctional intercellular communication is widely believed to play a role in tissue and organ development and in the maintenance of a normal cellular phenotype within tissues. A growing body of evidence suggests that chemical interference with gap-junctional intercellular communication is a contributing factor in tumor development; many carcinogens have been shown to inhibit this communication. Thus, such information may provide useful mechanistic data in evaluating cancer hazard (Swierenga and Yamasaki, 1992; Yamasaki, 1995).

Both cell death and cell proliferation are mandatory for the maintenance of homeostasis in normal tissue. The balance between the two directly affects the survival and growth of initiated cells, as well as preneoplastic and tumor cell populations (i.e., increase in cell proliferation or decrease in cell death) (Bellamy *et al.*, 1995; Cohen and Ellwein, 1990, 1991; Cohen *et al.*, 1991). In studies of proliferative effects, distinctions should be made between mitogenesis and regenerative proliferation (Cohen and Ellwein, 1990, 1991; Cohen *et al.*, 1991). In applying information from studies on cell proliferation and apoptosis to risk assessment, it is important to identify the tissues and target cells involved, to measure effects in both normal and neoplastic tissue, to distinguish between apoptosis and necrosis, and to determine the dose that affects these processes.

2.3.5.4. *Criteria for Judging Mode of Action.* Criteria that are applicable for judging the adequacy of mechanistically based data include the following:

—mechanistic relevance of the data to carcinogenicity,
—number of studies of each endpoint,
—consistency of results in different test systems and different species,
—similar dose response relationships for tumor and mode of action-related effects,
—tests conducted in accordance with generally accepted protocols, and
—degree of consensus and general acceptance among scientists regarding interpretation of the significance and specificity of the tests.

Although important information can be gained from in vitro test systems, a higher level of confidence is generally given to data that are derived from in vivo systems, particularly those results that show a site concordance with the tumor data.

### *2.4. Biomarker Information*

Various endpoints can serve as biological markers of events in biological systems or samples. In some cases, these molecular or cellular effects (e.g., DNA or protein adducts, mutation, chromosomal aberrations, levels of thyroid stimulating hormone) can be measured in blood, body fluids, cells and tissues to serve as biomarkers of exposure in both animals and humans (Callemen *et al.*, 1978; Birner *et al.*, 1990). As such, they can do the following:

—act as an internal surrogate measure of chemical dose, representing as appropriate, either recent (e.g., serum concentration) or accumulated (e.g., hemoglobin adducts) exposure,
—help identify doses at which elements of the carcinogenic process are operating,
—aid in interspecies extrapolations when data are available from both experimental animal and human cells, and
—under certain circumstances, provide insights into the possible shape of the dose response curve below levels where tumor incidences are observed (e.g., Choy, 1993).

Genetic and other findings (like changes in proto-oncogenes and tumor suppressor genes in preneoplastic and neoplastic tissue or possibly measures of endocrine disruption) can indicate the potential for disease and as such serve as biomarkers of effect. They, too, can be used in different ways:

—The spectrum of genetic changes in proliferative lesions and tumors following chemical administration to experimental animals can be determined and compared with those in spontaneous tumors in control animals, in animals exposed to other agents of varying structural and functional activities, and in persons exposed to the agent under study.
—They may provide a linkage to tumor response.
—They may help to identify subpopulations of individuals who may be at an elevated risk for cancer, e.g., cytochrome P450 2D6/debrisoquine sensitivity for lung cancer (Caporaso *et al.*, 1989) or inherited colon cancer syndromes (Kinzler *et al.*, 1991; Peltomäki *et al.*, 1993).
—As with biomarkers of exposure, it may be justified in some cases to use these endpoints for dose response assessment or to provide insight into the potential shape of the dose response curve at doses below those at which tumors are induced experimentally.

In applying biomarker data to cancer assessment (particularly assessments based on epidemiologic data), one should consider the following:

—routes of exposure
—exposure to mixtures
—time after exposure
—sensitivity and specificity of biomarkers
—dose response relationships.

### *2.5. Mode of Action—Implications for Hazard Characterization and Dose Response*

The interaction of the biology of the organism and the chemical properties of the agent determine whether there is an adverse effect. Thus, mode of action analysis is based on physical, chemical, and biological information that helps to explain critical events in an agent's influence on development of tumors. The entire range of information developed in the assessment is reviewed to arrive at a reasoned judgment. An agent may work by more than one mode of action both at different sites and at the same tumor site. It is felt that at least some information bearing on mode of action (e.g., SAR, screening tests for mutagenicity) is present for most agents undergoing assessment of carcinogenicity, even though certainty about exact molecular mechanisms may be rare.

Inputs to mode of action analysis include tumor data in humans, animals, and among structural analogues as well as the other key data. The more complete the data package and generic knowledge about a given mode of action, the more confidence one has and the more one can replace or refine default science policy positions with relevant information. Making reasoned judgments is generally based on a data-rich source of chemical, chemical class, and tumor type-specific information. Many times there will be conflicting data and gaps in the information base; one must carefully evaluate these uncertainties before reaching any conclusion.

Some of the questions that need to be addressed include the following:

—Has a body of data been developed on the agent that fits with a generally accepted mode of action?

—Has the mode of action been published and gained general scientific acceptance through peer-reviewed research or is it still speculative?

—Is the mode of action consistent with generally agreed-upon principles and understanding of carcinogenesis?

—Is the mode of action reasonably anticipated or assumed, in the absence of specific data, to operate in humans? How is this question influenced by information on comparative uptake, metabolism, and excretion patterns across animals and humans?

—Do humans appear to be more or less sensitive to the mode of action than are animals?

—Does the agent affect DNA, directly or indirectly?

—Are there important determinants in carcinogenicity other than effects on DNA, such as changes in cell proliferation, apoptosis, gene expression, immune surveillance, or other influences?

In making decisions about potential modes of action and the relevance of animal tumor findings to humans (Ashby et al., 1990), very often the results of chronic animal studies may give important clues. Some of the important factors to review include the following:

—tumor types, e.g., those responsive to endocrine influence, those produced by reactive carcinogens (Ashby and Tennant, 1991),

—number of tumor sites, sexes, studies, and species affected or unaffected (Tennant, 1993),

—influence of route of exposure; spectrum of tumors; local or systemic sites,

—target organ or system toxicity, e.g., urinary chemical changes associated with stone formation, effects on immune surveillance,

—presence of proliferative lesions, e.g., hepatic foci, hyperplasias,

—progression of lesions from preneoplastic to benign to malignant with dose and time,

—ratio of malignant to benign tumors as a function of dose and time,

—time of appearance of tumors after commencing exposure,

—tumors invading locally, metastasizing, producing death,

—tumors at sites in laboratory animals with high or low spontaneous historical incidence,

—biomarkers in tumor cells, both induced and spontaneous, e.g., DNA or protein adducts, mutation spectra, chromosome changes, oncogene activation, and

—shape of the dose response in the range of tumor observation, e.g., linear vs. profound change in slope.

Some of the myriad of ways that information from chronic animal studies influences mode of action judgments include the following. Multisite and multispecies tumor effects are often associated with mutagenic agents. Tumors restricted to one sex/species may suggest an influence restricted to gender, strain, or species. Late onset of tumors that are primarily benign or are at sites with a high historical background incidence or show reversal of lesions on cessation of exposure may point to a growth-promoting mode of action. The possibility that an agent may act differently in different tissues or have more than one mode of action in a single tissue must also be kept in mind.

Simple knowledge of sites of tumor increase in rodent studies can give preliminary clues as to mode of action. Experience at the National Toxicology Program (NTP) indicates that substances that are DNA reactive and produce gene mutations may be unique in producing tumors in certain anatomical sites, while tumors at other sites may arise from both mutagenic or nonmutagenic influences (Ashby and Tennant, 1991; Huff et al., 1991).

Effects on tumor sites in rodents and other mode of action information has been explored for certain agents (Alison et al., 1994; Clayson, 1989; ECETOC, 1991; MacDonald et al., 1994; McClain, 1994; Tischer et al., 1991; ILSI, 1995; Cohen and Ellwein, 1991; FASEB, 1994; Havu et al., 1990; U.S. EPA, 1991; Li et al., 1987; Grasso and Hinton, 1991; Larson et al., 1994; IARC, 1990; Jack et al., 1983; Stitzel et al., 1989; Ingram and Grasso, 1991; Bus and Popp, 1987; Prahalada et al., 1994; Yamada et al., 1994; Hill et al., 1989; Burek et al., 1988).

The selection of a dose response extrapolation procedure for cancer risk estimation considers mode of action information. When information is extensive and there is considerable certainty in a given mode of action, a biologically based or case-specific model that incorporates data on processes involved is preferred. Obviously, use of such a model requires the existence of substantial data on component parameters of the mode of action, and judgments on its applicability must be made on a case-by-case basis.

In the absence of information to develop a biologically based or case-specific model, understanding of mode of action should be employed to the extent possible in deciding upon one of three science policy defaults: Low-dose linear extrapolation, nonlinear, and both procedures. The overall choice of the default(s) depends upon weighing the various inputs and deciding which best reflect the mode of action understanding. A rationale accompanies whichever default or defaults are chosen.

A default assumption of linearity is appropriate when the evidence supports a mode of action of gene mutation due to DNA reactivity or supports another mode of action that is anticipated to be linear. Other elements of empirical data may also support an inference of linearity, e.g., the background of human exposure to an agent might be such that added human exposure is on the linear part of a dose response curve that is sublinear overall. The default assumption of linearity is also appropriate as the ultimate default when evidence shows no DNA reactivity or other support for linearity, but neither is it sufficient evidence of a nonlinear mode of action to support a nonlinear procedure.

A default assumption of nonlinearity is appropriate when there is no evidence for linearity and sufficient evidence to support an assumption of nonlinearity and a nonlinear procedure. The mode of action may lead to a dose response relationship that is nonlinear, with response falling much more quickly than linearly with dose, or being most influenced by individual differences in sensitivity. Alternatively, the mode of action may theoretically have a threshold, e.g., the carcinogenicity may be a secondary effect of toxicity that is itself a threshold phenomenon.

Both linear and nonlinear procedures may be used in particular cases. If a mode of action analysis finds substantial support for differing modes of action for different tumor sites, an appropriate procedure is used for each. Both procedures may also be appropriate to discuss implications of complex dose response relationships. For example, if it is apparent that an agent is both DNA reactive and is highly active as a promotor at high doses, and there are insufficient data for modeling, both linear and nonlinear default procedures may be needed to decouple and consider the contribution of both phenomena.

### *2.6. Weight of Evidence Evaluation for Potential Human Carcinogenicity*

A weight of evidence evaluation is a collective evaluation of all pertinent information so that the full impact of biological plausibility and coherence are adequately considered. Identification and characterization of human carcinogenicity is based on human and experimental data, the nature, advantages and limitations of which have been discussed in the preceding sections.

The subsequent sections outline: (1) the basics of weighing individual lines of evidence and combining the entire body of evidence to make an informed judgment, (2) classification descriptors of cancer hazard, and (3) some case study examples to illustrate how the principles of guidance can be applied to arrive at a classification.

#### 2.6.1. Weight of Evidence Analysis

Judgment about the weight of evidence involves considerations of the quality and adequacy of data and consistency of responses induced by the agent in question. The weight of evidence judgment requires combined input of relevant disciplines. Initial views of one kind of evidence may change significantly when other information is brought to the interpretation. For example, a positive animal carcinogenicity finding may be diminished by other key data; a weak association in epidemiologic studies may be bolstered by consideration of other key data and animal findings. Factors typically considered are illustrated in figures below. Generally, no single weighing factor on either side determines the overall weight. The factors are not scored mechanically by adding pluses and minuses; they are judged in combination.

*Human Evidence.* Analyzing the contribution of evidence from a body of human data requires examining available studies and weighing them in the context of well-accepted criteria for causation (see section 2.2.1). A judgment is made about how closely they satisfy these criteria, individually and jointly, and how far they deviate from them. Existence of temporal relationships, consistent results in independent studies, strong association, reliable exposure data, presence of dose-related responses, freedom from biases and confounding factors, and high level of statistical significance are among the factors leading to increased confidence in a conclusion of causality.

Generally, the weight of human evidence increases with the number of adequate studies that show comparable results on populations exposed to the same agent under different conditions. The analysis takes into account all studies of high quality, whether showing positive associations or null results, or even protective effects. In weighing positive studies against null studies, possible reasons for inconsistent results should be sought, and results of studies that are judged to be of high quality are given more weight than those from studies judged to be methodologically less sound. See figure 2–1.

*Human Evidence Factors*

| *Increase weight* | *Decrease weight* |
|---|---|
| Number of independent studies with consistent results. | Few studies—equally well designed and conducted studies with null results |
| Most causal criteria satisfied:<br>Temporal relationship<br>Strong association<br>Reliable exposure data<br>Dose response relationship<br>Freedom from bias and confounding<br>Biological plausibility<br>High statistical significance | Few causal criteria satisfied |

FIGURE 2–1. Factors for Weighing Human Evidence

Generally, no single factor is determinative. For example, the strength of association is one of the causal criteria. A strong association (i.e., a large relatively risk) is more likely to indicate causality than a weak association. However, finding of a large excess risk in a single study must be balanced against the lack of consistency as reflected by null results from other equally well designed and well conducted studies. In this situation, the positive association of a single study may either suggest the presence of chance, bias or confounding, or reflect different exposure conditions. On the other hand, evidence of weak but consistent associations across several studies suggests either causality or the same confounder may be operating in all of these studies.

*Animal Evidence.* Evidence from long-term or other carcinogenicity studies in laboratory animals constitutes the second major class of information bearing on carcinogenicity. See figure 2–2. As discussed in section 2.2.2., each relevant study must be reviewed and evaluated as to its adequacy of design and conduct as well as the statistical significance and biological relevance of its findings. Factors that usually increase confidence in the predictivity of animal findings are those of (1) multiplicity of observations in independent studies; (2) severity of lesions, latency, and lesion progression; (3) consistency in observations.

*Animal Evidence Factors*

| *Increase weight* | *Decrease weight* |
|---|---|
| Number of independent studies with consistent results. | Single study—inconsistent results |
| Same site across species, structural analogues | |
| Multiple observations | Single site/species/sex |
| Species | |
| Sites | |
| Sexes | |
| Severity and progression of lesions | Benign tumors only |
| Early in life tumors/malignancy | |
| Dose response relationships | High background of incidence tumors |
| Lesion progression | |
| Uncommon tumore | |
| Route of administration like human exposure | Route of administration unlike human exposure |

FIGURE 2–2. Factors for Weighing Animal Evidence

*Other Key Evidence.* Additional information bearing on the qualitative assessment of carcinogenic potential may be gained from comparative pharmacokinetic and metabolism studies, genetic toxicity studies, SAR analysis, and other studies of an agent's properties. See figure 2–3. Information from these studies helps to elucidate potential modes of action and biological fate and disposition. The knowledge gained supports interpretation of cancer studies in humans and animals and provides a separate source of information about carcinogenic potential.

*Other Key Evidence Factors*

| *Increase weight* | *Decrease weight* |
|---|---|
| A rich set of other key data are available | Few or poor data |
| Physicochemical data | or |
| Data indicate reactivity with macromolecules | Inadequate data necessitate use of default assumptions |
| Structure activity relationships support hazard potential | or |
| Comparable metabolism and toxicokinetics between species. | Data show that animal findings are not relevant to humans |
| Toxicological and human clinical data support tumor findings | |
| Biomarker data support attribution of effects to agent | |
| Mode of action data support causal interpretation of human evidence or relevance of animal evidence | |

FIGURE 2–3. Factors for Weighing Other Key Evidence

*Totality of Evidence.* In reaching a view of the entire weight of evidence, all data and inferences are merged. Figure 2–4 indicates the generalities. In fact, possible weights of evidence span a broad continuum that cannot be capsulized. Most of the time the data in various lines of evidence fall in the middle of the weights represented in the four figures in this section.

*Totality of Evidence Factors*

| *Increase weight* | *Decrease weight* |
|---|---|
| Evidence of human causality | Data not available or do not show causality |
| Evidence of animal effects relevant | Data not available or not relevant |
| Coherent inferences | Conflicting data |
| Comparable metabolism and toxicokinetics between species. | Metabolism and toxicokinetics not comparable |
| Mode of action comparable across species | Mode of action not comparable across species |

FIGURE 2–4. Factors for Weighing Totality Evidence

The following section and the weight of evidence narrative discussed in 2.7.2. provide a way to state a conclusion and capture this complexity in a consistent way.

### 2.6.2. Descriptors for Classifying Weight of Evidence

Hazard classification uses three categories of descriptors for human carcinogenic potential: "known/likely," "cannot be determined," and "not likely." Each category has associated subdescriptors to further define the conclusion. The descriptors are not meant to replace an explanation of the nuances of the biological evidence, but rather to summarize it. Each category spans a wide variety of potential data sets and weights of evidence. There will always be gray areas, gradations, and borderline cases. That is why the descriptors are presented only in the context of a weight of evidence narrative whose format is given in section 2.7.2. Using them within a narrative preserves and presents the complexity that is an essential part of the hazard classification. Applying a descriptor is a matter of judgment and cannot be reduced to a formula. Risk managers should consider the entire range of information included in the narrative rather than focusing simply on the descriptor.

A single agent may be categorized in more than one way if, for instance, the agent is likely to be carcinogenic by one route of exposure but not by another (section 2.3.3).

The descriptors and subdescriptors are standardized and are to be used consistently from case to case. The discussions below explain descriptors and subdescriptors which appear in italics, and along with Appendix A and section 2.6.3, illustrate their use.

#### "Known/Likely"

This category of descriptors is appropriate when the available tumor effects and other key data are adequate to convincingly demonstrate carcinogenic potential for humans; it includes:

—Agents known to be carcinogenic in humans based on either epidemiologic evidence or a combination of epidemiologic and experimental evidence, demonstrating causality between human exposure and cancer,

—Agents that should be treated as if they were known human carcinogens, based on a combination of epidemiologic data showing a plausible causal association (not demonstrating it definitively) and strong experimental evidence.

—Agents that are likely to produce cancer in humans due to the production or anticipated production of tumors by modes of action that are relevant or assumed to be relevant to human carcinogenicity.

Modifying descriptors for particularly high or low ranking in the "known/likely" group can be applied based on scientific judgment and experience and are as follows:

—Agents that are likely to produce cancer in humans based on data that are at the high end of the weights of evidence typical of this group,

—Agents that are likely to produce cancer in humans based on data that are at the low end of the weights of evidence typical of this group.

#### "Cannot Be Determined"

This category of descriptors is appropriate when available tumor effects or other key data are suggestive or conflicting or limited in quantity and, thus, are not adequate to convincingly demonstrate carcinogenic potential for humans. In general, further agent specific and generic research and testing are needed to be able to describe human carcinogenic potential. The descriptor cannot be determined is used with a subdescriptor that captures the rationale:

—Agents whose carcinogenic potential cannot be determined, but for which there is suggestive evidence that raises concern for carcinogenic effects,

—Agents whose carcinogenic potential cannot be determined because the existing evidence is composed of conflicting data (e.g., some evidence is suggestive of carcinogenic effects, but other equally pertinent evidence does not confirm any concern), Agents whose carcinogenic potential cannot be determined because there are inadequate data to perform an assessment,

—Agents whose carcinogenic potential cannot be determined because no data are available to perform an assessment.

"Not Likely"

This is the appropriate descriptor when experimental evidence is satisfactory for deciding that there is no basis for human hazard concern, as follows (in the absence of human data suggesting a potential for cancer effects):

—Agents not likely to be carcinogenic to humans because they have been evaluated in at least two well conducted studies in two appropriate animal species without demonstrating carcinogenic effects,

—Agents not likely to be carcinogenic to humans because they have been appropriately evaluated in animals and show only carcinogenic effects that have been shown not to be relevant to humans (e.g., showing only effects in the male rat kidney due to accumulation of alpha$_{2u}$-globulin),

—Agents not likely to be carcinogenic to humans when carcinogenicity is dose or route dependent. For instance, not likely below a certain dose range (categorized as likely above that range) or not likely by a certain route of exposure (may be categorized as likely by another route of exposure). To qualify, agents will have been appropriately evaluated in animal studies and the only effects show a dose range or route limitation or a route limitation is otherwise shown by empirical data.

—Agents not likely to be carcinogenic to humans based on extensive human experience that demonstrates lack of effect (e.g., phenobarbital).

2.6.3. Case Study Examples

This section provides examples of substances that fit the three broad categories described above. These examples are based on available information about real substances and are selected to illustrate the principles for weight-of-evidence evaluation and the application of the classification scheme.

These case studies show the interplay of differing lines of evidence in making a conclusion. Some particularly illustrate the role that "other key data" can play in conclusions.

*Example 1: "Known Human Carcinogen"—Route-Dependent/Linear Extrapolation*

*Human Data*

Substance 1 is an aluminosilicate mineral that exists in nature with a fibrous habit. Several descriptive epidemiologic studies have demonstrated very high mortality from malignant mesothelioma, mainly of the pleura, in three villages in Turkey, where there was a contamination of this mineral and where exposure had occurred from birth. Both sexes were equally affected and at an unusually young age.

*Animal Data*

Substance 1 has been studied in a single long-term inhalation study in rats at one exposure concentration that showed an extremely high incidence of pleural mesothelioma (98 percent in treated animals versus 0 percent in concurrent controls). This is a rare malignant tumor in the rat and the onset of tumors occurred at a very early age (as early as 1 year of age). Several studies involving injection into the body cavities of rats or mice (i.e., pleural or peritoneal cavities) also produced high incidences of pleural or peritoneal mesotheliomas. No information is available on the carcinogenic potential of substance 1 in laboratory animals via oral and dermal exposures.

*Other Key Data*

Information on the physical and chemical properties of substance 1 indicates that it is highly respirable to humans and laboratory rodents. It is highly insoluble and is not likely to be readily degraded in biological fluid.

No information is available on the deposition, translocation, retention, lung clearance, and excretion of the substance after inhalation exposure or ingestion. Lung burden studies have shown the presence of elevated levels of the substance in lung tissue samples of human cases of pleural mesotheliomas from contaminated villages compared with control villages.

No data are available on genetic or related effects in humans. The substance has been shown to induce unscheduled DNA synthesis in human cells in vitro and transformation and unscheduled DNA synthesis in mouse cells.

The mechanisms by which this substance causes cancer in humans and animals are not understood, but appear to be related to its unique physical, chemical, and surface properties. Its fiber morphology is similar to a known group of naturally occurring silicate minerals that have been known to cause respiratory cancers (including pleural mesothelioma) from inhalation exposure and genetic changes in humans.

*Evaluation*

Human evidence is judged to establish a causal link between exposure to substance 1 and human cancer. Even though the human evidence does not satisfy all criteria for causality, this judgment is based on a number of unusual observations: large magnitude of the association, specificity of the association, demonstration of environmental exposure, biological plausibility, and coherence based on the entire body of knowledge of the etiology of mesothelioma.

Animal evidence demonstrates a causal relationship between exposure and cancer in laboratory animals. Although available data are not optimal in terms of design (e.g., the use of single dose, one sex only), the judgment is based on the unusual findings from the only inhalation experiment in rats (i.e., induction of an uncommon tumor, an extremely high incidence of malignant neoplasms, and onset of tumors at an early age). Additional evidence is provided by consistent results from several injection studies showing an induction of the same tumors by different modes of administration in more than one species.

Other key data, while limited, support the human and animal evidence of carcinogenicity. It can be inferred from human and animal data that this substance is readily deposited in the respiratory airways and deep lung and is retained for extended periods of time since first exposure. Information on related fibrous substances indicates that the modes of action are likely mediated by the physical and chemical characteristics of the substance (e.g., fiber shape, high aspect ratio, a high degree of insolubility in lung tissues).

Insufficient data are available to evaluate the human carcinogenic potential of substance 1 by oral exposure. Even though there is no information on its carcinogenic potential via dermal uptake, it is not expected to pose a carcinogenic hazard to humans by that route because it is very insoluble and is not likely to penetrate the skin.

*Conclusion*

It is concluded that substance 1 is a known human carcinogen by inhalation exposure. The weight of evidence of human carcinogenicity is based on (a) exceptionally increased incidence of malignant mesothelioma in epidemiologic studies of environmentally exposed human populations; (b) significantly increased incidence of malignant mesothelioma in a single inhalation study in rats and in several injection studies in rats and mice; and (c) supporting information on related fibrous substances that are known to cause cancer via inhalation and genetic damage in exposed mammalian and human mesothelial cells. The human carcinogenic potential of substance 1 via oral exposure cannot be determined on the basis of insufficient data. It is not likely to pose a carcinogenic hazard to humans via dermal uptake because it is not anticipated to penetrate the skin.

The mode of action of this substance is not understood. In addition to this uncertainty, dose response information is lacking for both human and animal data. Epidemiologic studies contain observations of significant excess cancer risks at relatively low levels of environmental exposure. The use of linear extrapolation in a dose response relationship assessment is appropriate as a default since mode of action data are not available.

*Example 2: "As If Known Human Carcinogen"—Any Exposure Conditions/Linear Extrapolation*

*Human Data*

Substance 2 is an alkene oxide. Several cohort studies of workers using substance 2 as a sterilant have been conducted. In the largest and most informative study, mortality from lymphatic and hematopoietic cancer was marginally elevated, but a significant trend was found, especially for lymphatic leukemia and non-Hodgkin's lymphoma, in relation to estimated cumulative exposure to the substance. Nonsignificant excesses of lymphatic and hematopoietic cancer were found in three other smaller studies of sterilization personnel.

In one cohort study of chemical workers exposed to substance 2 and other agents, mortality rate from lymphatic and hematopoietic cancer was elevated, but the excess was confined to a small subgroup with only occasional low-level exposure to substance 2. Six other studies of chemical workers are considered more limited due to a smaller number of deaths. Four studies found an excess of lymphatic and hematopoietic cancer (which were significant in two); no increase in mortality rate was observed in the other two studies.

### *Animal Data*

Substance 2 was studied in an oral gavage study in rats. Treatment of substance 2 resulted in a dose-dependent increased incidence in forestomach tumors that were mainly squamous-cell carcinomas.

Substance 2 was also studied in two inhalation studies in mice and two inhalation studies in rats. In the first mouse study, dose-dependent increases in combined benign and malignant tumors at several tissue sites were induced in mice of both sexes (lung tumors and tumors of the Harderian gland in each sex, and uterine adenocarcinomas, mammary carcinomas, and malignant lymphomas in females). In a second study—a screening study for pulmonary tumors in mice—inhalation exposure to substance 2 resulted in a dose-dependent increase in lung tumors. In the two inhalation studies in rats, increased incidences of mononuclear-cell leukemia and brain tumors were induced in exposed animals of each sex; increased incidences of peritoneal tumors in the region of the testis and subcutaneous fibromas were induced in exposed male rats.

Substance 2 induced local sarcomas in mice following subcutaneous injection. No tumors were found in a limited skin painting study in mice.

### *Other Key Data*

Substance 2 is a flammable gas at room temperature. The gaseous form is readily taken up in humans and rats, and in aqueous solution it can penetrate human skin. Studies in rats indicate that, once absorbed, substance 2 is uniformly distributed throughout the body. It is eliminated metabolically by hydrolysis and by conjugation with glutathione. The ability to form glutathione conjugate varies across animal species, with the rat being most active, followed by mice and rabbits.

Substance 2 is a directly acting alkylating agent. It has been shown to form adducts with hemoglobin in both humans and animals and with DNA in animals. The increased frequency of hemoglobin adducts, which have been used as markers of internal dose, has been found to correlate with the level and cumulative exposure to substance 2. Significant increases in chromosomal aberrations and sister chromatid exchanges in peripheral lymphocytes and induction of micronuclei in the bone marrow cells have been observed in exposed workers.

Substance 2 also induced chromosomal aberrations and sister chromatid exchanges in peripheral lymphocytes of monkeys exposed in vivo. It also induced gene mutation, specific locus mutation, sister chromatid exchanges, chromosomal aberrations, micronuclei, dominant lethal mutations, and heritable translocation in rodents exposed in vivo. In human cells in vitro, it induced sister chromatid exchanges, chromosomal aberrations, and unscheduled DNA synthesis. Similar genetic and related effects were observed in rodent cells in vitro and in nonmammalian systems.

### *Evaluation*

Available epidemiologic studies, taken together, suggest that a causal association between exposure to substance 2 and elevated risk of cancer is plausible. This judgment is based on small but consistent excesses of lymphatic and hematopoietic cancer in the studies of sterilization workers. Interpretation of studies of chemical workers is difficult because of possible confounding exposures. Nevertheless, findings of elevated risks of cancer at similar sites in chemical workers support the findings in studies of sterilization workers. Additional support is provided by observations of DNA damage in the same tissue in which elevated cancer was seen in exposed workers.

Extensive evidence indicates that substance 2 is carcinogenic to laboratory animals. Positive results were consistently observed in all well-designed and well-conducted studies. Substance 2 causes dose-related increased incidences of tumors at multiple tissue sites in rats and mice of both sexes by two routes of exposure (oral and inhalation). The only dermal study that yielded a nonpositive finding is considered of limited quality.

Other key data significantly add support to the potential carcinogenicity of substance 2. There is strong evidence of heritable mutations of exposed rodents and mutagenicity and clastogenicity both in vivo and in vitro. These findings are reinforced by observations of similar genetic damage in exposed workers. Additional support is based on SAR analysis that indicates that substance 2 is a highly DNA-reactive agent. Structurally related chemicals, i.e., low-molecular-weight epoxides, also exhibit carcinogenic effects in laboratory animals.

### *Conclusion*

Substance 2 should be considered as if it were a known human carcinogen by all routes of exposure. The weight of evidence of human carcinogenicity is based on (a) consistent evidence of carcinogenicity in rats and mice by oral and inhalation exposure; (b) epidemiologic evidence suggestive of a causal association between exposure and elevated risk of lymphatic and hematopoietic cancer; (c) evidence of genetic damage in blood lymphocytes and bone marrow cells of exposed workers; (d) mutagenic effects in numerous in vivo and in vitro test systems; (e) membership in a class of DNA-reactive compounds that have been shown to cause carcinogenic and mutagenic effects in animals; and (f) ability to be absorbed by all routes of exposure, followed by rapid distribution throughout the body.

Although the exact mechanisms of carcinogenic action of substance 2 are not completely understood, available data strongly indicate a mutagenic mode of action. Linear extrapolation should be assumed in dose response assessment.

### *Example 3: "Likely Human Carcinogen"—Any Exposure Conditions/Linear Extrapolation*

### *Human Data*

Substance 3 is a brominated alkane. Three studies have investigated the cancer mortality of workers exposed to this substance. No statistically significant increase in cancer at any site was found in a study of production workers exposed to substance 3 and several other chemicals. Elevated cancer mortality was reported in a much smaller study of production workers. An excess of lymphoma was reported in grain workers who may have had exposure to substance 3 and other chemical compounds. These studies are considered inadequate due to their small cohort size; lack of, or poorly characterized, exposure concentrations; or concurrent exposure of the cohort to other potential or known carcinogens.

### *Animal Data*

The potential carcinogenicity of substance 3 has been extensively studied in an oral gavage study in rats and mice of both sexes, two inhalation studies of rats of different strains of both sexes, an inhalation study in mice of both sexes, and a skin painting study in female mice.

In the oral study, increased incidences of squamous-cell carcinoma of the forestomach were found in rats and mice of both sexes. Additionally, there were increased incidences of liver carcinomas in female rats, hemangiosarcomas in male rats, and alveolar/bronchiolar adenoma of the lung of male and female mice. Excessive toxicity and mortality were observed in the rat study, especially in the high-dose groups, which resulted in early termination of study, and similar time-weighted average doses for the high- and low-treatment groups.

In the first inhalation study in rats and mice, increased incidences of carcinomas and adenocarcinomas of the nasal cavity and hemangiosarcoma of the spleen were found in exposed animals of each species of both sexes. Treated female rats also showed increased incidences of alveolar/bronchiolar carcinoma of the lung and mammary gland fibroadenomas. Treated male rats showed an increased incidence of peritoneal mesothelioma. In the second inhalation study in rats (single exposure only), significantly increased incidences of hemangiosarcoma of the spleen and adrenal gland tumors were seen in exposed animals of both sexes. Additionally, increased incidences of subcutaneous mesenchymal tumors and mammary gland tumors were induced in exposed male and female rats, respectively.

Lifetime dermal application of substance 3 to female mice resulted in significantly increased incidences of skin papillomas and lung tumors.

Several chemicals structurally related to substance 3 are also carcinogenic in rodents. The spectrum of tumor responses induced by related substances was similar to those seen with substance 3 (e.g., forestomach, mammary gland, lung tumors).

### *Other Key Data*

Substance 3 exists as a liquid at room temperature and is readily absorbed by ingestion, inhalation, and dermal contact. It is widely distributed in the body and is eliminated in the urine mainly as metabolites (e.g., glutathione conjugate).

Substance 3 is not itself DNA-reactive, but is biotransformed to reactive metabolites as inferred by findings of its covalent binding to DNA and induction of DNA strand breaks, both in vivo and in vitro. Substance 3 has been shown to induce sister chromatid exchanges, mutations, and unscheduled DNA synthesis in human and rodent cells in vitro. Reverse and forward mutations have been consistently produced in bacterial assays and in vitro assays using eukaryotic cells. Substance 3, however, did not induce dominant lethal mutations in mice or rats, or chromosomal aberrations or micronuclei in bone marrow cells of mice treated in vivo.

### *Evaluation*

Available epidemiologic data are considered inadequate for an evaluation of a causal association of exposure to the substance and excess of cancer mortality due to major study limitations.

There is extensive evidence that substance 3 is carcinogenic in laboratory animals. Increased incidences of tumors at multiple sites have been observed in multiple studies in two species of both sexes with different routes of exposure. It induces tumors both at the site of entry (e.g., nasal tumors via inhalation, forestomach tumors by ingestion, skin tumor with dermal exposure) and at distal sites (e.g., mammary gland tumors). Additionally, it induced tumors at the same sites in both species and sexes via different routes of exposure (e.g., lung tumors). With the exception of the oral study in which the employed doses caused excessive toxicity and mortality, the other studies are considered adequately designed and well conducted. Overall, given the magnitude and extent of animal carcinogenic responses to substance 3, coupled with similar responses to structurally related substances, these animal findings are judged to be highly relevant and predictive of human responses.

Other key data, while not very extensive, are judged to be supportive of carcinogenic potential. Substance 3 has consistently been shown to be mutagenic in mammalian cells, including human cells, and nonmammalian cells; thus, mutation is likely a mode of action for its carcinogenic activity. However, the possible involvement of other modes of action has not been fully investigated. Furthermore, induction of genetic changes from in vivo exposure to substance 3 has not been demonstrated.

### *Conclusion*

Substance 3 is likely to be a human carcinogen by any route of exposure. In comparison with other agents designated as likely human carcinogens, the overall weight of evidence for substance 3 puts it at the high end of the grouping.

The weight of evidence of human carcinogenicity is based on animal evidence and other key evidence. Human data are inadequate for an evaluation of human carcinogenicity. The overall weight of evidence is based on (a) extensive animal evidence showing induction of increases of tumors at multiple sites in both sexes of two rodent species via three routes of administration relevant to human exposure; (b) tumor data of structural analogues exhibiting similar patterns of tumors in treated rodents; (c) in vitro evidence for mutagenic effects in mammalian cells and nonmammalian systems; and (d) its ability to be absorbed by all routes of exposure followed by rapid distribution throughout the body.

Some uncertainties are associated with the mechanisms of carcinogenicity of substance 3. Although there is considerable evidence indicating that mutagenic events could account for carcinogenic effects, there is still a lack of adequate information on the mutagenicity of substance 3 in vivo in animals or humans. Moreover, alternative modes of action have not been explored. Nonetheless, available data indicate a likely mutagenic mode of action. Linear extrapolation should be assumed in dose response assessment.

### *Example 4: "Likely Human Carcinogen"—All Routes/Linear and Nonlinear Extrapolation*

### *Human Data*

Substance 4 is a chlorinated alkene solvent. Several cohort studies of dry cleaning and laundry workers exposed to substance 4 and other solvents reported significant excesses of mortality due to cancers of the lung, cervix, esophagus, kidney, bladder, lymphatic and hematopoietic system, colon, or skin. No significant cancer risks were observed in a subcohort of one these investigations of dry cleaning workers exposed mainly to substance 4. Possible confounding factors such as smoking, alcohol consumption, or low socioeconomic status were not considered in the analyses of these studies.

A large case-control study of bladder cancer did not show any clear association with dry cleaning. Several case-control studies of liver cancer identified an increased risk of liver cancer with occupational exposure to organic solvents. The specific solvents to which workers were exposed and exposure levels were not identified.

### *Animal Data*

The potential carcinogenicity of substance 4 has been investigated in two long-term studies in rats and mice of both sexes by oral administration and inhalation.

Significant increases in hepatocellular carcinomas were induced in mice of both sexes treated with substance 4 by oral gavage. No increases in tumor incidence were observed in treated rats. Limitations in both experiments included control groups smaller than treated groups, numerous dose adjustments during the study, and early mortality due to treatment-related nephropathy.

In the inhalation study, there were significantly increased incidences of hepatocellular adenoma and carcinoma in exposed mice of both sexes. In rats of both sexes, there were marginally significant increased incidences of mononuclear cell leukemia (MCL) when compared with concurrent controls. The incidences of MCL in control animals, however, were higher than historical controls from the conducting laboratory. The tumor finding was also judged to be biologically significant because the time to onset of tumor was decreased and the disease was more severe in treated than in control animals. Low incidences of renal tubular cell adenomas or adenocarcinomas were also observed in exposed male rats. The tumor incidences were not statistically significant but there was a significant trend.

*Other Key Data*

Substance 4 has been shown to be readily and rapidly absorbed by inhalation and ingestion in humans and laboratory animals. Absorption by dermal exposure is slow and limited. Once absorbed, substance 4 is primarily distributed to and accumulated in adipose tissue and the brain, kidney, and liver. A large percentage of substance 4 is eliminated unchanged in exhaled air, with urinary excretion of metabolites comprising a much smaller percentage. The absorption and distribution profiles of substance 4 are similar across species including humans.

Two major metabolites (trichloroacetic acid (TCA), and trichloroethanol), which are formed by a P–450-dependent mixed-function oxidase enzyme system, have been identified in all studied species, including humans. There is suggestive evidence for the formation of an epoxide intermediate based on the detection of two other metabolites (oxalic acid and trichloroacetyl amide). In addition to oxidative metabolism, substance 4 also undergoes conjugation with glutathione. Further metabolism by renal beta-lyases could lead to two minor active metabolites (trichlorovinyl thiol and dichlorothiokente).

Toxicokinetic studies have shown that the enzymes responsible for the metabolism of substance 4 can be saturated at high exposures. The glutathione pathway was found to be a minor pathway at low doses, but more prevalent following saturation of the cytochrome P–450 pathway. Comparative in vitro studies indicate that mice have the greater capacity to metabolize to TCA than rats and humans. Inhalation studies also indicate saturation of oxidative metabolism of substance 4, which occurs at higher dose levels in mice than in rats and humans. Based on these findings, it has been postulated that the species differences in the carcinogenicity of substance 4 between rats and mice may be related to the differences in the metabolism to TCA and glutathione conjugates.

Substance 4 is a member of the class of chlorinated organics that often cause liver and kidney toxicity and carcinogenesis in rodents. Like many chlorinated organics, substance 4 itself does not appear to be mutagenic. Substance 4 was generally negative in in vitro bacterial systems and in vivo mammalian systems. However, a minor metabolite formed in the kidney by the glutathione conjugation pathway has been found to be a strong mutagen.

The mechanisms of induced carcinogenic effects of substance 4 in rats and mice are not completely understood. It has been postulated that mouse liver carcinogenesis is related to liver peroxisomal proliferation and toxicity of the metabolite TCA. Information on whether or not TCA induces peroxisomal proliferation in humans is not definitive. The induced renal tumors in male rats may be related either to kidney toxicity or the activity of a mutagenic metabolite. The mechanisms of increases in MCL in rats are not known.

*Evaluation*

Available epidemiologic studies, taken together, provide suggestive evidence of a possible causal association between exposure to substance 4 and cancer incidence in the laundry and dry cleaning industries. This is based on consistent findings of elevated cancer risks in several studies of different populations of dry cleaning and laundry workers. However, each individual study is compromised by a number of study deficiencies including small numbers of cancers, confounding exposure to other solvents, and poor exposure characterization. Others may interpret these findings collectively as inconclusive.

There is considerable evidence that substance 4 is carcinogenic to laboratory animals. It induces tumors in mice of both sexes by oral and inhalation exposure and in rats of both sexes via inhalation. However, due to incomplete understanding of the mode of mechanism of action, the predictivity of animal responses to humans is uncertain.

Animal data of structurally related compounds showing common target organs of toxicity and carcinogenic effects (but lack of mutagenic effects) provide additional support for the carcinogenicity of substance 4. Comparative toxicokinetic and metabolism information indicates that the mouse may be more susceptible to liver carcinogenesis than rats and humans. This may indicate differences of the degree and extent of carcinogenic responses, but does not detract from the qualitative weight of evidence of human carcinogenicity. The toxicokinetic information also indicates that oral and inhalation are the major routes of human exposure.

*Conclusion*

Substance 4 is likely to be carcinogenic to humans by all routes of exposure. The weight of evidence of human carcinogenicity is based on: (a) Demonstrated evidence of carcinogenicity in two rodent species of both sexes via two relevant routes of human exposure; (b) the substance's similarity in structure to other chlorinated organics that are known to cause liver and kidney toxicity and carcinogenesis in rodents; (c) suggestive evidence of a possible association between exposure to the substance in the laundry and dry cleaning industries and increased cancer incidence; and (d) human and animal data indicating that the substance is absorbed by all routes of exposure.

In comparison with other agents designated as likely carcinogens, the overall weight of evidence places it the lower end of the grouping. This is because there is a lack of good evidence that observed excess cancer risk in exposed workers is due solely to substance 4. Moreover, there is considerable scientific uncertainty about the human significance of certain rodent tumors associated with substance 4 and related compounds. In this case, the human relevance of the animal evidence of carcinogenicity relies on the default assumption.

Overall, there is not enough evidence to give high confidence in a conclusion about any single mode of action; it appears that more than one is plausible in different rodent tissues. Nevertheless, the lack of mutagenicity of substance 4 and its general growth-promoting effect on high background tumors as well as its toxicity toward mouse liver and rat kidney tissue support the view that the predominant mode is growth-promoting rather than mutagenic. A mutagenic contribution to carcinogenicity due to a metabolite cannot be ruled out. The dose response assessment should, therefore, adopt both default approaches, nonlinear and linear extrapolations. The latter approach is very conservative since it likely overestimates risk at low doses in this case, and is primarily useful for screening analyses.

*Example 5: "Likely/Not Likely Human Carcinogen"—Range of Dose Limited, Margin-of-Exposure Extrapolation*

*Human Data*

Substance 5 is a metal-conjugated phosphonate. No human tumor or toxicity data exist on this chemical.

*Animal Data*

Substance 5 caused a statistically significant increase in the incidence of urinary bladder tumors in male, but not female, rats at 30,000 ppm (3 percent) in the diet in a long-term study. Some of these animals had accompanying urinary tract stones and toxicity. No bladder tumors or adverse urinary tract effects were seen in two lower dose groups (2,000 and 8,000 ppm) in the same study. A chronic dietary study in mice at doses comparable to those in the rat study showed no tumor response or urinary tract effects. A 2-year study in dogs at doses up to 40,000 ppm showed no adverse urinary tract effects.

*Other Key Data*

Subchronic dosing of rats confirmed that there was profound development of stones in the male bladder at doses comparable to those causing cancer in the chronic study, but not at lower doses. Sloughing of the epithelium of the urinary tract accompanied the stones.

There was a lack of mutagenicity relevant to carcinogenicity. In addition, there is nothing about the chemical structure of substance 5 to indicate DNA-reactivity or carcinogenicity.

Substance 5 is composed of a metal, ethanol, and a simple phosphorus-oxygen-containing component. The metal is not absorbed from the gut, whereas the other two components are absorbed. At high doses, ethanol is metabolized to carbon dioxide, which makes the urine more acidic; the phosphorus level in the blood is increased and calcium in the urine is increased. Chronic testing of the phosphorus-oxygen-containing component alone in rats did not show any tumors or adverse effects on the urinary tract.

Because substance 5 is a metal complex, it is not likely to be readily absorbed from the skin.

*Evaluation*

Substance 5 produced cancer of the bladder and urinary tract toxicity in male, but not female rats and mice, and dogs failed to show the toxicity noted in male rats. The mode of action developed from the other key data to account for the toxicity and tumors in the male rats is the production of bladder stones. At high but not lower subchronic doses in the male rat, substance 5 leads to elevated blood phosphorus levels; the body responds by releasing excess calcium into the urine. The calcium and phosphorus combine in the urine and precipitate into multiple stones in the bladder. The stones are very irritating to the bladder; the bladder lining is eroded, and cell proliferation occurs to compensate for the loss of the lining. Cell layers pile up, and finally, tumors develop. Stone formation does not involve the chemical per se but is secondary to the effects of its constituents on the blood and, ultimately, the urine. Bladder stones, regardless of their cause, commonly produce bladder tumors in rodents, especially the male rat.

*Conclusion*

Substance 5, a metal aliphatic phosphonate, is likely to be carcinogenic to humans only under high-exposure conditions following oral and inhalation exposure that lead to bladder stone formation, but is not likely to be carcinogenic under low-exposure conditions. It is not likely to be a human carcinogen via the dermal route, given that the compound is a metal conjugate that is readily ionized and its dermal absorption is not anticipated. The weight of evidence is based on (a) bladder tumors only in male rats; (b) the absence of tumors at any other site in rats or mice; (c) the formation of calcium-phosphorus-containing bladder stones in male rats at high, but not low, exposures that erode bladder epithelium and result in profound increases in cell proliferation and cancer; and (d) the absence of structural alerts or mutagenic activity.

There is a strong mode of action basis for the requirements of (a) high doses of substance 5, (b) which lead to excess calcium and increased acidity in the urine, (c) which result in the precipitation of stones and (d) the necessity of stones for toxic effects and tumor hazard potential. Lower doses fail to perturb urinary constituents, lead to stones, produce toxicity, or give rise to tumors. Therefore, dose response assessment should assume nonlinearity.

A major uncertainty is whether the profound effects of substance 5 may be unique to the rat. Even if substance 5 produced stones in humans, there is only limited evidence that humans with bladder stones develop cancer. Most often human bladder stones are either passed in the urine or lead to symptoms resulting in their removal. However, since one cannot totally dismiss the male rat findings, some hazard potential may exist in humans following intense exposures. Only fundamental research could illuminate this uncertainty.

*Example 6: "Cannot Be Determined"—Suggestive Evidence*

*Human Data*

Substance 6 is an unsaturated aldehyde. In a cohort study of workers in a chemical plant exposed to a mixture of chemicals with substance 6 as a minor component, an elevated risk of cancer than was expected was reported. This study is considered inadequate because of multiple exposures, small cohort, and poor exposure characterization.

*Animal Data*

Substance 6 was tested for potential carcinogenicity in a drinking water study in rats, an inhalation study in hamsters, and a skin painting study in mice. No significant increases in tumors were observed in male rats treated with substance 6 at three dose levels in drinking water. However, a significant increase of adrenal cortical adenomas was found in the only treated female dose group administered a dose equivalent to the high dose of males. This study used a small number of animals (20 per dose group).

No significant finding was detected in the inhalation study in hamsters. This study is inadequate due to the use of too few animals, short duration of exposure, and inappropriate dose selection (use of a single exposure that was excessively toxic as reflected by high mortality).

No increase in tumors was induced in the skin painting study in mice. This study is of inadequate design for carcinogenicity evaluation because of several deficiencies: small number of animals, short duration of exposure, lack of reporting about the sex and age of animals, and purity of test material.

Substance 6 is structurally related to lowmolecularweight aldehydes that generally exhibit carcinogenic effects in the respiratory tracts of laboratory animals via inhalation exposure. Three skin painting studies in mice and two subcutaneous injection studies of rats and mice were conducted to evaluate the carcinogenic potential of a possible metabolite of substance 6 (identified in vitro). Increased incidences of either benign or combined benign and malignant skin tumors were found in the dermal studies. In the injection studies of rats and mice, increased incidences of local sarcomas or squamous cell carcinoma were found at the sites of injection. All of these studies are limited by the small number of test animals, the lack of characterization of test material, and the use of single doses.

*Other Key Data*

Substance 6 is a flammable liquid at room temperature. Limited information on its toxicokinetics indicates that it can be absorbed by all routes of exposure. It is eliminated in the urine mainly as glutathione conjugates. Substance 6 is metabolized in vitro by rat liver and lung microsomal preparations to a dihydroxylated aldehyde.

No data were available on the genetic and related effects of substance 6 in humans. It did not induce dominant lethal mutations in mice. It induced sister chromatid exchanges in rodent cells in vitro. The mutagenicity of substance 6 is equivocal in bacteria. It did not induce DNA damage or mutations in fungi.

*Evaluation*

Available human data are judged inadequate for an evaluation of any causal relationship between exposure to substance 6 and human cancer.

The carcinogenic potential of substance 6 has not been adequately studied in laboratory animals due to serious deficiencies in study design, especially the inhalation and dermal studies. There is some evidence of carcinogenicity in the drinking water study in female rats. However, the significance and predictivity of that study to human response are uncertain since the finding is limited to occurrence of benign tumors, one sex, and at the high dose only. Additional suggestion for animal carcinogenicity comes from observation that a possible metabolite is carcinogenic at the site of administration. This metabolite, however, has not been studied in vivo. Overall, the animal evidence is judged to be suggestive for human carcinogenicity.

Other key data, taken together, do not add significantly to the overall weight of evidence of carcinogenicity. SAR analysis indicates that substance 6 would be DNA-reactive. However, mutagenicity data are inconclusive. Limited in vivo data do not support a mutagenic effect. While there is some evidence of DNA damage in rodent cells in vitro, there is either equivocal or no evidence of mutagenicity in nonmammalian systems.

*Conclusion*

The human carcinogenicity potential of substance 6 cannot be determined on the basis of available information. Both human and animal data are judged inadequate for an evaluation. There is evidence suggestive of potential carcinogenicity on the basis of limited animal findings and SAR considerations. Data are not sufficient to judge whether there is a mode of carcinogenic action. Additional studies are needed for a full evaluation of the potential carcinogenicity of substance 6. Hence, dose response assessment is not appropriate.

### *Example 7: "Not Likely Human Carcinogen"—Appropriately Studied Chemical in Animals Without Tumor Effects*

*Human Data*

Substance 7, a plant extract, has not been studied for its toxic or carcinogenic potential in humans.

*Animal Data*

Substance 7 has been studied in four chronic studies in three rodent species. In a feeding study in rats, males showed a nonsignificant increase in benign tumors of the parathyroid gland in the high-dose group, where the incidence in concurrent controls greatly exceeded the historical control range. Females demonstrated a significant increase in various subcutaneous tumors in the low-dose group, but findings were not confirmed in the high-dose group, and there was no dose response relationship. These effects were considered as not adding to the evidence of carcinogenicity. No tumor increases were noted in a second adequate feeding study in male and female rats. In a mouse feeding study, no tumor increases were noted in dosed animals. There was some question as to the adequacy of the dosing; however it was noted that in the mouse 90-d subchronic study, a dose of twice the high dose in the chronic study led to significant decrements in body weight. In a hamster study there were no significant increases in tumors at any site. No structural analogues of substance 7 have been tested for cancer.

*Other Key Data*

There are no structural alerts that would suggest that substance 7 is a DNA-reactive compound. It is negative for gene mutations in bacteria and yeast, but positive in cultured mouse cells. Tests for structural chromosome aberrations in cultured mammalian cells and in rats are negative; however, the animals were not tested at sufficiently high doses. Substance 7 binds to proteins of the cell division spindle; therefore, there is some likelihood for producing numerical chromosome aberrations, an endpoint that is sometimes noted in cancers. In sum, there is limited and conflicting information concerning the mutagenic potential of the agent.

The compound is absorbed via oral and inhalation exposure but only poorly via the skin.

*Evaluation*

The only indication of a carcinogenic effect comes from the finding of benign tumors in male rats in a single study. There is no confirmation of a carcinogenic potential from dosed females in that study, in males and females in a second rat study, or from mouse and hamster studies.

There is no structural indication that substance 7 is DNA-reactive, there is inconsistent evidence of gene mutations, and chromosome aberration testing is negative. The agent binds to cell division spindle proteins and may have the capacity to induce numerical chromosome anomalies. Further information on gene mutations and in vivo structural and numerical chromosome aberrations may be warranted.

*Conclusion*

Substance 7 is not likely to be carcinogenic to humans via all relevant routes of exposure. This weight of evidence judgment is largely based on the absence of significant tumor increases in chronic rodent studies. Adequate cancer studies in rats, mice, and hamsters fail to show any carcinogenic effect; a second rat study showed an increase in benign tumors at a site in dosed males, but not females.

### *2.7. Presentation of Results*

The results of the hazard assessment are presented in the form of an overall technical hazard characterization. Additionally, a weight of evidence narrative is used when the conclusion as to carcinogenic potential needs to be presented separately from the overall characterization.

#### 2.7.1. Technical Hazard Characterization

The hazard characterization has two functions. First, it presents results of the hazard assessment and an explanation of how the weight of evidence conclusion was reached. It explains the potential for human hazard, anticipated attributes of its expression, and mode of action considerations for dose response. Second, it contains the information needed for eventual incorporation into a risk characterization consistent with EPA guidance on risk characterization (U.S. EPA, 1995).

The characterization qualitatively describes the conditions under which the agent's effects may be expressed in human beings. These qualitative hazard conditions are ones that are observable in the toxicity data without having done either quantitative dose response or exposure assessment. The description includes how expression is afffected by route of exposure and dose levels and durations of exposure.

The discussion of limitations of dose as a qualitative aspect of hazard addresses the question of whether reaching a certain dose range appears to be a precondition for a hazard to be expressed; for example, when carcinogenic effects are secondary to another toxic effect that appears only when a certain dose level is reached. The assumption is made that an agent that causes internal tumors by one route of exposure will be carcinogenic by another route, if it is absorbed by the second route to give an internal dose. Conversely, if there is a route of exposure by which the agent is not absorbed (does not cross an absorption barrier; e.g., the exchange boundaries of skin, lung, and digestive tract through uptake processes) to any significant degree, hazard is not anticipated by that route. An exception to the latter statement would be when the site of contact is also the target tissue of carcinogenicity. Duration of exposure may be a precondition for hazard if, for example, the mode of action requires cytotoxicity or a physiologic change, or is mitogenicity, for which exposure must be sustained for a period of time before effects occur. The characterization could note that one would not anticipate a hazard from isolated, acute exposures. The above conditions are qualitative ones regarding preconditions for effects, not issues of relative absorption or potency at different dose levels. The latter are dealt with under dose response assessment (section 3), and their implications can only be assessed after human exposure data are applied in the characterization of risk.

The characterization describes conclusions about mode of action information and its support for recommending dose response approaches.

The hazard characterization routinely includes the following in support of risk characterization:

- —a summary of results of the assessment,
- —identification of the kinds of data available to support conclusions and explanation of how the data fit together, highlighting the quality of the data in each line of evidence, e.g., tumor effects, short-term studies, structure-activity relationships), and highlighting the coherence of inferences from the different kinds of data,
- —strengths and limitations (uncertainties) of the data and assessment, including identification of default assumptions invoked in the face of missing or inadequate data,
- —identification of alternative interpretations of data that are considered equally plausible,
- —identification of any subpopulations believed to be more susceptible to the hazard than the general population,
- —conclusions about the agent's mode of action and recommended dose response approaches,
- —significant issues regarding interpretation of data that arose in the assessment. Typical ones may include:
  - —determining causality in human studies, dosing (MTD), background tumor rates, relevance of animal tumors to humans,
  - —weighing studies with positive and null results, considering the influence of other available kinds of evidence,
  - —drawing conclusions based on mode of action data versus using a default assumption about the mode of action.

### 2.7.2. Weight of Evidence Narrative

The weight of evidence narrative summarizes the results of hazard assessment employing the descriptors defined in section 2.6.1. The narrative (about two pages in length) explains an agent's human carcinogenic potential and the conditions of its expression. If data do not allow a conclusion as to carcinogenicity, the narrative explains the basis of this determination. An example narrative appears below. More examples appear in Appendix A.

The items regularly included in a narrative are:

- —name of agent and Chemical Abstracts Services number, if available,
- —conclusions (by route of exposure) about human carcinogenicity, using a standard descriptor from section 2.6.1,
- —summary of human and animal tumor data on the agent or its structural analogues, their relevance, and biological plausibility,
- —other key data (e.g., structure-activity data, toxicokinetics and metabolism, short-term studies, other relevant toxicity or clinical data),
- —discussion of possible mode(s) of action and appropriate dose response approach(es),
- —conditions of expression of carcinogenicity, including route, duration, and magnitude of exposure.

*Example Narrative*

*Aromatic Compound*

*CAS# XXX*

*CANCER HAZARD SUMMARY*

Aromatic compound (AR) is known to be carcinogenic to humans by all routes of exposure.

The weight of evidence of human carcinogenicity is based on (a) consistent evidence of elevated leukemia incidence in studies of exposed workers and significant increases of genetic damage in bone marrow cells and blood lymphocytes of exposed workers; (b) significantly increased incidence of cancer in both sexes of several strains of rats and mice; (c) genetic damage in bone marrow cells of exposed rodents and effects on intracellular signals that control cell growth.

AR is readily absorbed by all routes of exposure and rapidly distributed throughout the body. The mode of action of AR is not understood. A dose response assessment that assumes linearity of the relationship is recommended as a default.

SUPPORTING INFORMATION

Data include numerous human epidemiologic and biomonitoring studies, long-term bioassays, and other data on effects of AR on genetic material and cell growth processes. The key epidemiologic studies and animal studies are well conducted and reliable. The other data are generally of good quality also.

Human Effects

Numerous epidemiologic and case studies have reported an increased incidence or a causal relationship associating exposure to AR and leukemia. Among the studies are five for which the design and performance as well as follow-up are considered adequate to demonstrate the causal relationship. Biomonitoring studies of exposed workers have found dose-related increases in chromosomal aberrations in bone marrow cells and blood lymphocytes.

Animal Effects

AR caused increased incidence of tumors in various tissues in both sexes of several rat and mouse strains. AR also caused chromosomal aberrations in rabbits, mice, and rats—as it does in humans.

Other Key Data

AR itself is not DNA-reactive and is not mutagenic in an array of test systems both in vitro and in vivo. Metabolism of AR yields several metabolites that have been separately studied for effects on carcinogenic processes. Some have mutagenic activity in test systems and some have other effects on cell growth controls inside cells.

MODE OF ACTION

No rodent tumor precisely matches human leukemia in pathology. The closest parallel is a mouse cancer of blood-forming tissue. Studies of the effects of AR at the cell level in this model system are ongoing. As yet, the mode of action of AR is unclear, but most likely the carcinogenic activity is associated with one or a combination of its metabolites. It is appropriate to apply a linear approach to the dose response assessment pending a better understanding because: (a) genetic damage is a typical effect of AR exposure in mammals and (b) metabolites of AR produce mutagenic effects in addition to their other effects on cell growth controls; AR is a multi-tissue carcinogen in mammals suggesting that it is affecting a common controlling mechanism of cell growth.

### *3. Dose Response Assessment*

Dose response assessment first addresses the relationship of dose[2] to the degree of response observed in an experiment or human study. When environmental exposures are outside of the range of observation, extrapolations are necessary in order to estimate or characterize the dose relationship (ILSI, 1995). In general, three extrapolations may be made: from high to low doses, from animal to human responses, and from one route of exposure to another.

The dose response assessment proceeds in two parts. The first is assessment of the data in the range of empirical observation. This is followed by extrapolations either by modeling, if there are sufficient data to support a model, or by a default procedure based as much as possible on information about the agent's mode of action. The following discussion covers the assessment of observed data and extrapolation procedures, followed by sections on analysis of response data and analysis of dose data. The final section discusses dose response characterization.

### *3.1. Dose Response Relationship*

In the discussion that follows, reference to "response" data includes measures of tumorigenicity as well as other responses related to carcinogenicity. The other responses may include effects such as changes in DNA, chromosomes, or other key macromolecules, effects on growth signal transduction, induction of physiological or hormonal changes, effects on cell proliferation, or other effects that play a role in the process. Responses other than tumorigenicity may be considered part of the observed range in order either to extend the tumor dose response analysis or to inform it. The nontumor response or responses also may be used in lieu of tumor data if they are considered to be a more informative representation of the carcinogenic process for an agent (see section 3.2).

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[2] For this discussion, "exposure" means contact of an agent with the outer boundary of an organism. "Applied dose" means the amount of an agent presented to an absorption barrier and available for absorption. "Internal dose" means the amount crossing an absorption barrier (e.g., the exchange boundaries of skin, lung, and digestive tract) through uptake processes. "Delivered dose" for an organ or cell means the amount available for interaction with that organ or cell (U.S. EPA, 1992a).

### 3.1.1. Analysis in the Range of Observation

*Biologically Based and Case-Specific Models.* A biologically based model is one whose parameters are calculated independently of curve-fitting of tumor data. If data are sufficient to support a biologically based model specific to the agent and the purpose of the assessment is such as to justify investing resources supporting use, this is the first choice for both the observed tumor and related response data and for extrapolation below the range of observed data in either animal or human studies. Examples are the two-stage models of initiation plus clonal expansion and progression developed by Moolgavkar and Knudson (1981) and Chen and Farland (1991). Such models require extensive data to build the form of the model as well as to estimate how well it conforms with the observed carcinogenicity data. Theoretical estimates of process parameters, such as cell proliferation rates, are not used to enable application of such a model (Portier, 1987).

Similarly preferred as a first choice are dose response models based on general concepts of mode of action and data on the agent. For a case-specific model, model parameters and data are obtained from studies on the agent.

In most cases, a biologically based or case-specific model will not be practicable, either because the necessary data do not exist or the decisions that the assessment are to support do not justify or permit, the time and resources required. In these cases, the analysis proceeds using curve-fitting models followed by default procedures for extrapolation, based, to the extent possible, on mode of action and other biological information about the agent. These methods and assumptions are described below.

*Curve-Fitting and Point of Departure for Extrapolation.* Curve-fitting models are used that are appropriate to the kind of response data in the observed range. Any of several models can be used; e.g., the models developed for benchmark dose estimation for noncancer endpoints may be applied (Barnes et al., 1995).

For some data sets, particularly those with extreme curvature, the impact of model selection can be significant. In these cases, the choice is rationalized on biological grounds as possible. In other cases, the nature of the data or the way it is reported will suggest other types of models; for instance, when longitudinal data on tumor development are available, time to tumor or survival models may be necessary and appropriate to fit the data.

A point of departure for extrapolation is estimated. This is a point that is either a data point or an estimated point that can be considered to be in the range of observation, without any significant extrapolation. The $LED_{10}$—the lower 95 percent confidence limit on a dose associated with 10 percent extra risk—is such a point and is the standard point of departure, adopted as a matter of science policy to remain as consistent and comparable from case to case as possible.[3] It is also a comparison point for noncancer endpoints (U.S. EPA, 1991f). The central estimate of the $ED_{10}$ also may be appropriate for use in relative hazard and potency ranking.

For some data sets, a choice of point of departure other than the $LED_{10}$ may be appropriate. For example, if the observed response is below the $LED_{10}$, then a lower point may be a better choice. Moreover, some forms of data may not be amenable to curve-fitting estimation, but to estimation of a "low-" or "no-observable-adverse-effect level" (LOAEL, NOAEL) instead, e.g., certain continuous data.

The rationale supporting the use of the $LED_{10}$ is that a 10 percent response is at or just below the limit of sensitivity of discerning a significant difference in most long-term rodent studies. The lower confidence limit on dose is used to appropriately account for experimental uncertainty (Barnes et al., 1995) and for consistency with the "benchmark dose" approach for noncancer assessment; it does not provide information about human variability. In laboratory studies of cancer or noncancer endpoints, the level of dose at which increased incidence of effects can be detected, as compared to controls, is a function of the size of the sample (e.g., number of animals), dose spacing, and other design aspects. In noncancer assessment, the dose at which significant effects are not observed is traditionally termed the NOAEL. This is not, in fact, a level of zero effect. The NOAEL in most study protocols is about the same as an $LED_5$ or $LED_{10}$—the lower 95 percent confidence limit on a dose associated with a 5 percent or 10 percent increased effect (Faustman et al., 1994; Haseman, 1983). Adopting parallel points of departure for cancer and noncancer assessment is intended to make discussion and comparison of the two kinds of assessment more comparable because of their similar science and science policy bases and similar analytic approaches.

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[3] It is appropriate to report the central estimate of the $ED_{10}$, the upper and lower 95 percent confidence limits, and a graphical representation of model fit.

Analysis of human studies in the observed range is designed case by case, depending on the type of study and how dose and response are measured in the study. In some cases the agent may have discernible interactive effects with another agent (e.g., asbestos and smoking), making possible estimation of contribution of the agent and others as risk factors. Also, in some cases, estimation of population risk in addition, or in lieu of, individual risk may be appropriate.

### 3.1.2. Analysis in the Range of Extrapolation

Extrapolation to lower doses is usually necessary, and in the absence of a biologically based or case-specific model, is based on one of the three default procedures described below. The Agency has adopted these three procedures as a matter of science policy based on current hypotheses of the likely shapes of dose response curves for differing modes of action. The choice of the procedure to be used in an individual case is a judgment based on the agent's modes of action.

*Linear.* A default assumption of linearity is appropriate when the evidence supports a mode of action of gene mutation due to DNA reactivity or supports another mode of action that is anticipated to be linear. Other elements of empirical support may also support an inference of linearity, e.g., the background of human exposure to an agent might be such that added human exposure is on the linear part of a dose response curve that is sublinear overall. The default assumption of linearity is also appropriate as the ultimate science policy default when evidence shows no DNA reactivity or other support for linearity, but neither does it show sufficient evidence of a nonlinear mode of action to support a nonlinear procedure.

For linear extrapolation, a straight line is drawn from the point of departure to the origin—zero dose, zero response (Flamm and Winbush, 1984; Gaylor and Kodell, 1980; Krewski et al., 1984). This approach is generally conservative of public health, in the absence of information about the extent of human variability in sensitivity to effects. When a linear extrapolation procedure is used, the risk characterization summary displays the degree of extrapolation that is being made from empirical data and discusses its implications for the interpretation of the resulting quantitative risk estimates.

*Nonlinear.* A default assumption of nonlinearity is appropriate when there is no evidence for linearity and sufficient evidence to support an assumption of nonlinearity. The mode of action may lead to a dose response relationship that is nonlinear, with response falling much more quickly than linearly with dose, or being most influenced by individual differences in sensitivity. Alternatively, the mode of action may theoretically have a threshold, e.g., the carcinogenicity may be a secondary effect of toxicity or of an induced physiological change (see example 5, section 2.6.3) that is itself a threshold phenomenon.

As a matter of science policy under this analysis, nonlinear probability functions are not fitted to the response data to extrapolate quantitative low-dose risk estimates because different models can lead to a very wide range of results, and there is currently no basis, generally, to choose among them. Sufficient information to choose leads to a biologically based or case-specific model. In cases of nonlinearity, the risk is not extrapolated as a probability of an effect at low doses. A margin of exposure analysis is used, as described below, to evaluate concern for levels of exposure. The margin of exposure is the $LED_{10}$ or other point of departure divided by the environmental exposure of interest. The EPA does not generally try to distinguish between modes of action that might imply a "true threshold" from others with a nonlinear dose response relationship. Except in unusual cases where extensive information is available, it is not possible to distinguish between these empirically.

The environmental exposures of interest, for which margins of exposure are estimated, may be actual or projected future levels. The risk manager decides whether a given margin of exposure is acceptable under applicable management policy criteria. The risk assessment provides supporting information to assist the decisionmaker.

The EPA often conducts margin of exposure analyses to accompany estimates of reference doses or concentrations (RfD, RfC) for noncancer endpoints.[4] The procedure for a margin of exposure analysis for a response related to carcinogenicity is operationally analogous, the difference being that a threshold of cancer response is not necessarily presumed. If, in a particular case, the evidence indicates a threshold, as in the case of carcinogenicity being secondary to another toxicity that has a threshold, the margin of exposure analysis for the toxicity is the same as is done for a noncancer endpoint, and an RfD or RfC for that toxicity also may be estimated and considered in cancer assessment.

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[4] An RfD or RfC is an estimate with uncertainty spanning perhaps an order of magnitude of daily exposure to the human population (including sensitive subgroups) that is anticipated to be without appreciable deleterious effects during a lifetime. It is arrived at by dividing empirical data on effects by uncertainty factors that consider inter- and intraspecies variability, extent of data on all important chronic exposure toxicity endpoints, and availability of chronic as opposed to subchronic data.

The analogy between margin of exposure analysis for noncancer and cancer responses begins with the analogy of points of departure; for both it is an effect level, either $LED_{10}$ or other point (presented as a human equivalent dose or concentration), as data support. For cancer responses, when animal data are used, the point of departure is a human equivalent dose or concentration arrived at by interspecies dose adjustment or toxicokinetic analysis. It is likely that many of the margin of exposure analyses for cancer will be for responses other than tumor incidence. This is because the impetus for considering a carcinogenic agent to have a nonlinear dose response will be a conclusion that there is sufficient evidence to support that view, and this evidence will often be information about a response that is a precursor to tumors.

To support a risk manager's consideration of the margin of exposure, information is provided in a risk assessment about current understanding of the phenomena that may be occurring as dose (exposure) decreases substantially below the observed data. The goal is to provide as much information as possible about the risk reduction that accompanies lowering of exposure. To this end, some important points to address include:

—The slope of the observed dose response relationship at the point of departure and its uncertainties and implications for risk reduction associated with exposure reduction (a shallow slope suggests less reduction than a steep slope),

—The nature of the response used for the dose response assessment,

—The nature and extent of human variability in sensitivity to the phenomena involved,

—Persistence of the agent in the body,

—Human sensitivity to the phenomena as compared with experimental animals.

As a default assumption for two of these points, a factor of no less than 10-fold each may be employed to account for human variability and for interspecies differences in sensitivity when humans may be more sensitive than animals. When humans are found to be less sensitive than animals, a default factor of no smaller than a 1/10 fraction may be employed to account for this. If any information about human variability or interspecies differences is available, it is used instead of the default or to modify it as appropriate. In the case of analysis based on human studies, obviously, interspecies differences are not a factor. It should be noted that the dose response relationship and inter- or intraspecies variability in sensitivity are independent. That is, reduction of dose reduces risk; it does not change variability. To support consideration of acceptability of a margin of exposure by the risk manager, the assessment considers all of the hazard and dose response factors together; hence, the factors for inter- and intraspecies differences alone are not to be considered a default number for an acceptable margin of exposure. (See Section 1.3.2.5.)

It is appropriate to provide a graphical representation of the data and dose response modeling in the observed range, also showing exposure levels of interest to the decisionmaker. (See figure 3–1.) In order to provide a frame of reference, by way of comparison, a straight line extrapolation may be displayed to show what risk levels would be associated with decreasing dose, if the dose response were linear. If this is done, the clear accompanying message is that, in this case of nonlinearity, the response falls disproportionately with decreasing dose.

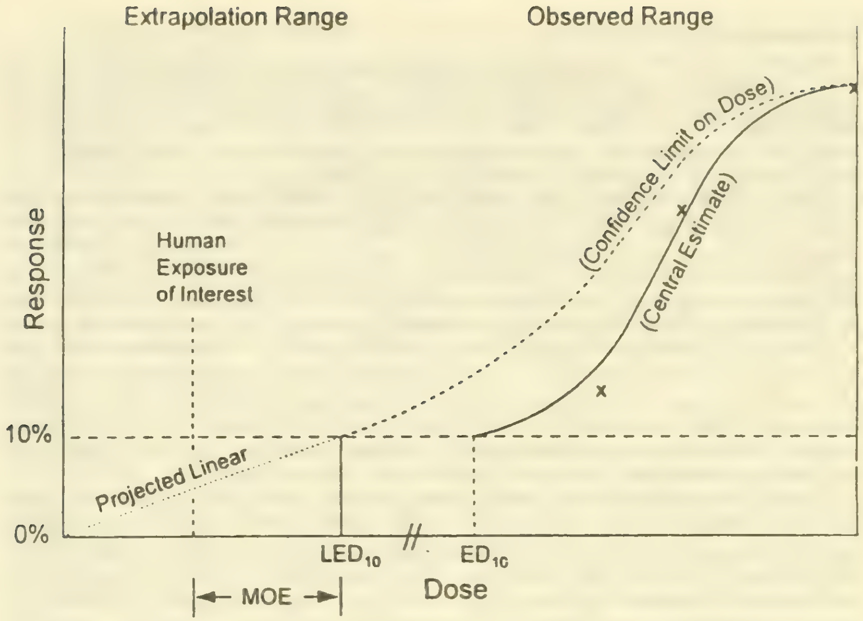

FIGURE 3–1. Graphical Presentation of Data and Extrapolations

*Linear and Nonlinear.* Both linear and nonlinear procedures may be used in particular cases. If a mode of action analysis finds substantial support for differing modes of action for different tumor sites, an appropriate procedure is used for each. Both procedures may also be appropriate to discuss implications of complex dose response relationships. For example, if it is apparent that an agent is both DNA reactive and is highly active as a promotor at high doses, and there are insufficient data for modeling, both linear and nonlinear default procedures may be needed to decouple and consider the contribution of both phenomena.

### 3.1.3. Use of Toxicity Equivalence Factors and Relative Potency Estimates

A toxicity equivalence factor (TEF) procedure is one used to derive quantitative dose response estimates for agents that are members of a category or class of agents. TEFs are based on shared characteristics that can be used to order the class members by carcinogenic potency when cancer bioassay data are inadequate for this purpose (U.S. EPA, 1991c). The ordering is by reference to the characteristics and potency of a well-studied member or members of the class. Other class members are indexed to the reference agent(s) by one or more shared characteristics to generate their TEFs. The TEFs are usually indexed at increments of a factor of 10. Very good data may permit a smaller increment to be used. Shared characteristics that may be used are, for example, receptor-binding characteristics, results of assays of biological activity related to carcinogenicity, or structure-activity relationships.

TEFs are generated and used for the limited purpose of assessment of agents or mixtures of agents in environmental media when better data are not available. When better data become available for an agent, its TEF should be replaced or revised. Criteria for constructing TEFs are given in U.S. EPA (1991b). The criteria call for data that are adequate to support summing doses of the agents in mixtures. To date, adequate data to support use of TEF's has been found in only one class of compounds (dioxins) (U.S. EPA, 1989a).

Relative potencies can be similarly derived and used for agents with carcinogenicity or other supporting data. These are conceptually similar to TEFs, but they are less firmly based in science and do not have the same level of data to support them. They are used only when there is no better alternative.

The uncertainties associated with both TEFs and relative potencies are explained whenever they are used.

### *3.2. Response Data*

Response data for analysis include tumor incidence data from human or animal studies as well as data on other responses as they relate to an agent's carcinogenicity, such as effects on growth control processes or cell macromolecules or other toxic effects. Tumor incidence data are ordinarily the basis of dose response assessment, but other response data can augment such assessment or provide separate assessments of carcinogenicity or other important effects.

Data on carcinogenic processes underlying tumor effects may be used to support biologically based or case-specific models. Other options for such data exist. If confidence is high in the linkage of a precursor effect and the tumor effect, the assessment of tumor incidence may be extended to lower dose levels by linking it to the assessment of the precursor effect (Swenberg et al., 1987). Even if a quantitative link is not appropriate, the assessment for a precursor effect may provide a view of the likely shape of the dose response curve for tumor incidence below the range of tumor observation (Cohen and Ellwein, 1990; Choy, 1993). If responses other than tumor incidence are regarded as better representations of the carcinogenicity of the agent, they may be used in lieu of tumor responses. For example, if it is concluded that the carcinogenic effect is secondary to another toxic effect, the dose response for the other effect will likely be more pertinent for risk assessment. As another example, if disruption of hormone activity is the key mode of action of an agent, data on hormone activity may be used in lieu of tumor incidence data.

If adequate positive human epidemiologic response data are available, they provide an advantageous basis for analysis since concerns about interspecies extrapolation do not arise. Adequacy of human exposure data for quantification is an important consideration in deciding whether epidemiologic data are the best basis for analysis in a particular case. If adequate exposure data exist in a well-designed and well-conducted epidemiologic study that detects no effects, it may be possible to obtain an upper-bound estimate of the potential human risk to provide a check on plausibility of available estimates based on animal tumor or other responses, e.g., do confidence limits on one overlap the point estimate of the other?

When animal studies are used, response data from a species that responds most like humans should be used if information to this effect exists. If this is unknown and an agent has been tested in several experiments involving different animal species, strains, and sexes at several doses and different routes of exposure, all of the data sets are considered and compared, and a judgment is made as to the data to be used to best represent the observed data and important biological features such as mode of action. Appropriate options for presenting results include:

—Use of a single data set,
—Combining data from different experiments (Stiteler et al., 1993; Vater et al., 1993),
—Showing a range of results from more than one data set,
—Showing results from analysis of more than one statistically significant tumor response based on differing modes of action,
—Representing total response in a single experiment by combining animals with statistically significant tumors at more than one site, or
—A combination of these options.

The approach judged to best represent the data is presented with the rationale for the judgment, including the biological and statistical considerations involved. The following are some points to consider:

—Quality of study protocol and execution,
—Proportion of malignant neoplasms,
—Latency of onset of neoplasia,
—Number of data points to define the relationship of dose and response,
—Background incidence in test animal,
—Differences in range of response among species, sexes, strains,
—Most sensitive responding species, and
—Availability of data on related precursor events to tumor development.

Analyses of carcinogenic effects other than tumor incidence are similarly presented and evaluated for their contribution to a best judgment on how to represent the biological data for dose response assessment.

### *3.3. Dose Data*

Whether animal experiments or epidemiologic studies are the sources of data, questions need to be addressed in arriving at an appropriate measure of dose for the anticipated environmental exposure. Among these are:

—Whether the dose is expressed as an environmental concentration, applied dose, or delivered dose to the target organ,

—Whether the dose is expressed in terms of a parent compound, one or more metabolites, or both,
—The impact of dose patterns and timing where significant,
—Conversion from animal to human doses, where animal data are used, and
—The conversion metric between routes of exposure where necessary and appropriate.

In practice, there may be little or no information on the concentration or identity of the active form at a target; being able to compare the applied and delivered doses between routes and species is the ideal, but is rarely attained. Even so, the objective is to use available data to obtain as close to a measure of internal or delivered dose as possible.

The following discussion assumes that the analyst will have data of varying detail in different cases about toxicokinetics and metabolism. Discussed below are approaches to basic data that are most frequently available, as well as approaches and judgments for improving the analysis based on additional data. The estimation of dose in human studies is tailored to the form of dose data available.

### 3.3.1. Interspecies Adjustment of Dose

When adequate data are available, the doses used in animal studies can be adjusted to equivalent human doses using toxicokinetic information on the particular agent. The methods used should be tailored to the nature of the data on a case-by-case basis. In rare cases, it may also be possible to make adjustments based on toxicodynamic considerations. In most cases, however, there are insufficient data available to compare dose between species. In these cases, the estimate of human equivalent dose is based on science policy default assumptions. The defaults described below are modified or replaced whenever better comparative data on toxicokinetic or metabolic relationships are available. The availability and discussion of the latter also may permit reduction or discussion of uncertainty in the analysis.

For oral exposure, the default assumption is that delivered doses are related to applied dose by a power of body weight. This assumption rests on the similarities of mammalian anatomy, physiology, and biochemistry generally observed across species. This assumption is more appropriate at low applied dose concentrations where sources of nonlinearity, such as saturation or induction of enzyme activity, are less likely to occur. To derive an equivalent human oral dose from animal data, the default procedure is to scale daily applied doses experienced for a lifetime in proportion to body weight raised to the 0.75 power ($W^{0.75}$). Equating exposure concentrations in parts per million units for food or water is an alternative version of the same default procedure because daily intakes of these are in proportion to $W^{0.75}$. The rationale for this factor rests on the empirical observation that rates of physiological processes consistently tend to maintain proportionality with $W^{0.75}$. A more extensive discussion of the rationale and data supporting the Agency's adoption of this scaling factor is in U.S. EPA, 1992b. Information such as blood levels or exposure biomarkers or other data that are available for interspecies comparison are used to improve the analysis when possible.

The default procedure to derive an human equivalent concentration of inhaled particles and gases is described in U.S. EPA (1994) and Jarabek (1995a,b). The methodology estimates respiratory deposition of inhaled particles and gases and provides methods for estimating internal doses of gases with different absorption characteristics. The method is able to incorporate additional toxicokinetics and metabolism to improve the analysis if such data are available.

### 3.3.2. Toxicokinetic Analyses

Physiologically based mathematical models are potentially the most comprehensive way to account for toxicokinetic processes affecting dose. Models build on physiological compartmental modeling and attempt to incorporate the dynamics of tissue perfusion and the kinetics of enzymes involved in metabolism of an administered compound.

A comprehensive model requires the availability of empirical data on the carcinogenic activity contributed by parent compound and metabolite or metabolites and data by which to compare kinetics of metabolism and elimination between species. A discussion of issues of confidence accompanies presentation of model results (Monro, 1992). This includes considerations of model validation and sensitivity analysis that stress the predictive performance of the model. When a delivered dose measure is used in animal to human extrapolation of dose response data, the assessment should discuss the confidence in the assumption that the toxicodynamics of the target tissue(s) will be the same in both species. Toxicokinetic data can improve dose response assessment by accounting for sources of change in proportionality of applied to internal or delivered dose at various levels of applied dose. Many of the sources of potential nonlinearity involve saturation or induction of enzymatic processes at high doses. An analysis that accounts for nonlinearity (for instance, due to enzyme saturation kinetics) can assist in avoiding overestimation or underestimation of low dose response otherwise resulting from extrapolation from a sublinear or supralinear part of the experimental dose response curve (Gillette, 1983). Toxicokinetic processes tend to become linear at low doses, an expectation that is more robust than low-dose linearity of response (Hattis, 1990). Accounting for toxicokinetic nonlinearities allows better description of the shape of the curve at relatively high levels of dose in the range of observation, but cannot determine linearity or nonlinearity of response at low dose levels (Lutz, 1990a; Swenberg *et al.*, 1987).

Toxicokinetic modeling results may be presented as the preferred method of estimating human equivalent dose or in parallel discussion with default assumptions depending on relative confidence in the modeling.

### 3.3.3. Route-to-Route Extrapolation

Judgments frequently need to be made about the carcinogenicity of an agent through a route of exposure different than the one in the underlying studies. For example, exposures of interest may be through inhalation of an agent tested primarily through animal feeding studies or through ingestion of an agent that showed positive results in human occupational studies from inhalation exposure.

Route-to-route extrapolation has both qualitative and quantitative aspects. For the qualitative aspect, the assessor weighs the degree to which positive results through one route of exposure in human or animal studies support a judgment that similar results would have been observed in appropriate studies using the route of exposure of interest. In general, confidence in making such a judgment is strengthened when the tumor effects are observed at a site distant from the portal of entry and when absorption through the route of exposure of interest is similar to absorption via the tested routes. In the absence of contrary data, the qualitative default assumption is that, if the agent is absorbed by a route to give an internal dose, it may be carcinogenic by that route. (See section 2.7.1.)

When a qualitative extrapolation can be supported, quantitative extrapolation may still be problematic in the absence of adequate data. The differences in biological processes among routes of exposure (oral, inhalation, dermal) can be great because of, for example, first-pass effects and differing results from different exposure patterns. There is no generally applicable method for accounting for these differences in uptake processes in quantitative route-to-route extrapolation of dose response data in the absence of good data on the agent of interest. Therefore, route-to-route extrapolation of dose data relies on a case-by-case analysis of available data. When good data on the agent itself are limited, an extrapolation analysis can be based on expectations from physical and chemical properties of the agent, properties and route-specific data on structurally analogous compounds, or in vitro or in vivo uptake data on the agent. Route-to-route uptake models may be applied if model parameters are suitable for the compound of interest. Such models are currently considered interim methods; further model development and validation is awaiting the development of more extensive data (see generally, Gerrity and Henry, 1990). For screening or hazard ranking, route-to-route extrapolation may be based on assumed quantitative comparability as a default, as long as it is reasonable to assume absorption by compared routes. When route-to-route extrapolation is used, the assessor's degree of confidence in both the qualitative and quantitative extrapolation should be discussed in the assessment and highlighted in the dose response characterization.

### 3.3.4. Dose Averaging

The cumulative dose received over a lifetime, expressed as lifetime average daily dose, is generally considered an appropriate default measure of exposure to a carcinogen (Monro, 1992). The assumption is made that a high dose of a carcinogen received over a short period of time is equivalent to a corresponding low dose spread over a lifetime. While this is a reasonable default assumption based on theoretical considerations, departures from it are expected. Another approach is needed in some cases, such as when dose-rate effects are noted (e.g., formaldehyde). Cumulative dose may be replaced, as appropriate and justified by the data, with other dose measures. In such cases, modifications to the default assumption are made to take account of these effects; the rationale for the selected approach is explained.

In cases where a mode of action or other feature of the biology has been identified that has special dose implications for sensitive subpopulations (e.g., differential effects by sex or disproportionate impacts of early-life exposure), these are explained and are recorded to guide exposure assessment and risk characterization. Special problems arise when the human exposure situation of concern suggests exposure regimens (e.g., route and dosing schedule) that are substantially different from those used in the relevant animal studies. These issues are explored and pointed out for attention in the exposure assessment and risk characterization.

### *3.4. Discussion of Uncertainties*

The exploration of significant uncertainties in data for dose and response and in extrapolation procedures is part of the assessment. The presentation distinguishes between model uncertainty and parameter uncertainty. Model uncertainty is an uncertainty about a basic biological question. For example, a default, linear dose response extrapolation may have been made based on tumor and other key evidence supporting the view that the model for an agent's mode of action is a DNA-reactive process. Discussion of the confidence in the extrapolation is appropriately done qualitatively or by showing results for alternatives that are equally plausible. It is not useful, for example, to conduct quantitative uncertainty analysis running multiple forms of linear models. This would obviate the function of the policy default.

Parameter uncertainties deal with numbers representing statistical or analytical measures of variance or error in data or estimates. Uncertainties in parameters are described quantitatively, if practicable, through sensitivity analysis and statistical uncertainty analysis. With the recent expansion of readily available computing capacity, computer methods are being adapted to create simulated biological data that are comparable with observed information. These simulations can be used for sensitivity analysis, for example, to analyze how small, plausible variations in the observed data could affect dose response estimates. These simulations can also provide information about experimental uncertainty in dose response estimates, including a distribution of estimates that are compatible with the observed data. Because these simulations are based on the observed data, they cannot assist in evaluating the extent to which the observed data as a whole are idiosyncratic rather than typical of the true situation. If quantitative analysis is not possible, significant parameter uncertainties are described qualitatively. In either case, the discussion highlights uncertainties that are specific to the agent being assessed, as distinct from those that are generic to most assessments.

Estimation of the applied dose in a human study has numerous uncertainties such as the exposure fluctuations that humans experience compared with the controlled exposures received by animals on test. In a prospective cohort study, there is opportunity to monitor exposure and human activity patterns for a period of time that supports estimation of applied dose (U.S. EPA, 1992a). In a retrospective study, exposure may be based on monitoring data but is often based on human activity patterns and levels reconstructed from historical data, contemporary data, or a combination of the two. Such reconstruction is accompanied by analysis of uncertainties considered with sensitivity analysis in the estimation of dose (Wyzga, 1988; U.S. EPA, 1986a). These uncertainties can also be assessed for any confounding factor for which a quantitative adjustment of dose response data is made (U.S. EPA, 1984).

### *3.5. Technical Dose Response Characterization*

As with hazard characterization, the dose response characterization serves the dual purposes of presenting a technical characterization of the assessment results and supporting the risk characterization.

The characterization presents the results of analyses of dose data, of response data, and of dose response. When alternative approaches are plausible and persuasive in selecting dose data, response data, or extrapolation procedures, the characterization follows the alternative paths of analysis and presents the results. The discussion covers the question of whether any should be preferred over others because it (or they) better represents the available data or corresponds to the view of the mechanism of action developed in the hazard assessment. The results for different tumor types by sex and species are provided along with the one(s) preferred. Similarly, results for responses other than tumor incidence are shown if appropriate.

Numerical dose response estimates are presented to one significant figure. Numbers are qualified as to whether they represent central tendency or upper bounds and whether the method used is inherently more likely to overestimate or underestimate (Krewski et al., 1984).

In cases where a mode of action or other feature of the biology has been identified that has special implications for early-life exposure, differential effects by sex, or other concerns for sensitive subpopulations, these are explained. Similarly, any expectations that high dose-rate exposures may alter the risk picture for some portion of the population are described. These and other perspectives are recorded to guide exposure assessment and risk characterization. Whether the lifetime average daily dose or another measure of dose should be considered for differing exposure scenarios is discussed.

Uncertainty analyses, qualitative or quantitative if possible, are highlighted in the characterization.

The dose response characterization routinely includes the following, as appropriate for the data available:

- —Identification of the kinds of data available for analysis of dose and response and for dose response assessment,
- —Results of assessment as above,
- —Explanation of analyses in terms of quality of data available,
- —Selection of study/response and dose metric for assessment,
- —Discussion of implications of variability in human susceptibility, including for susceptible subpopulation,
- —Applicability of results to varying exposure scenarios—issues of route of exposure, dose rate, frequency, and duration,
- —Discussion of strengths and limitations (uncertainties) of the data and analyses that are quantitative as well as qualitative, and
- —Special issues of interpretation of data, such as:
  - —Selecting dose data, response data, and dose response approach(es),
  - —Use of meta-analysis,
  - —Uncertainty and quantitative uncertainty analysis.

### *4. Technical Exposure Characterization*

Guidelines for exposure assessment of carcinogenic and other agents are published (U.S. EPA, 1992a) and are used in conjunction with these cancer risk assessment guidelines. Presentation of exposure descriptors is a subject of discussion in EPA risk characterization guidance (U.S. EPA, 1995). The exposure characterization is a technical characterization that presents the assessment results and supports risk characterization.

The characterization provides a statement of purpose, scope, level of detail, and approach used in the assessment, identifying the exposure scenario(s) covered. It estimates the distribution of exposures among members of the exposed population as the data permit. It identifies and compares the contribution of different sources and routes and pathways of exposure. Estimates of the magnitude, duration, and frequency of exposure are included as available monitoring or modeling results or other reasonable methods permit. The strengths and limitations (uncertainties) of the data and methods of estimation are made clear.

The exposure characterization routinely includes the following, as appropriate and possible for the data available:

- —Identification of the kinds of data available,
- —Results of assessment as above,
- —Explanation of analyses in terms of quality of data available,
- —Uncertainty analyses as discussed in Exposure Assessment Guidelines, distinguishing uncertainty from variability, and
- —Explanation of derivation of estimators of "high end" or central tendency of exposure and their appropriate use.

### *5. Risk Characterization*

#### *5.1. Purpose*

The risk characterization process includes an integrative analysis followed by a presentation in a Risk Characterization Summary, of the major results of the risk assessment. The Risk Characterization Summary is a nontechnical discussion that minimizes the use of technical terms. It is an appraisal of the science that supports the risk manager in making public health decisions, as do other decisionmaking analyses of economic, social, or technology issues. It also serves the needs of other interested readers. The summary is an information resource for preparation of risk communication information, but being somewhat technical, is not itself the usual vehicle for communication with every audience.

The integrative analysis brings together the assessments and characterizations of hazard, dose response, and exposure to make risk estimates for the exposure scenarios of interest. This analysis is generally much more extensive than the Risk Characterization Summary. It may be peer-reviewed or subject to public comment along with the summary in preparation for an Agency decision. The integrative analysis may be titled differently by different EPA programs (e.g., "Staff Paper" for criteria air pollutants), but it typically will identify exposure scenarios of interest in a decisionmaking and present risk analyses associated with them. Some of the analyses may concern scenarios in several media, others may examine, for example, only drinking water risks. It also may be the document that contains quantitative analyses of uncertainty.

The values supported by a risk characterization throughout the process are transparency in environmental decisionmaking, clarity in communication, consistency in core assumptions and science policies from case to case, and reasonableness. While it is appropriate to err on the side of protection of health and the environment in the face of scientific uncertainty, common sense and reasonable application of assumptions and policies are essential to avoid unrealistic estimates of risk (U.S. EPA, 1995). Both integrative analyses and the Risk Characterization Summary present an integrated and balanced picture of the analysis of the hazard, dose response, and exposure. The risk analyst should provide summaries of the evidence and results and describe the quality of available data and the degree of confidence to be placed in the risk estimates. Important features include the constraints of available data and the state of knowledge, significant scientific issues, and significant science and science policy choices that were made when alternative interpretations of data existed (U.S. EPA, 1995). Choices made about using default assumptions or data in the assessment are explicitly discussed in the course of analysis, and if a choice is a significant issue, it is highlighted in the summary.

### *5.2. Application*

Risk characterization is a necessary part of generating any Agency report on risk, whether the report is preliminary to support allocation of resources toward further study or comprehensive to support regulatory decisions. In the former case, the detail and sophistication of the characterization are appropriately small in scale; in the latter case, appropriately extensive. Even if a document covers only parts of a risk assessment (hazard and dose response analyses for instance), the results of these are characterized.

Risk assessment is an iterative process that grows in depth and scope in stages from screening for priority-making, to preliminary estimation, to fuller examination in support of complex regulatory decisionmaking. Default assumptions are used at every stage because no database is ever complete, but they are predominant at screening stages and are used less as more data are gathered and incorporated at later stages. Various provisions in EPA-administered statutes require decisions based on findings that represent all stages of iteration. There are close to 30 provisions within the major statutes that require decisions based on risk, hazard, or exposure assessment. For example, Agency review of premanufacture notices under section 5 of the Toxic Substances Control Act relies on screening analyses, while requirements for industry testing under section 4 of that Act rely on preliminary analyses of risk or simply of exposure. At the other extreme, air quality criteria under the Clean Air Act rest on a rich data collection required by statute to undergo reassessment every few years. There are provisions that require ranking of hazards of numerous pollutants—by its nature a screening level of analysis—and other provisions that require a full assessment of risk. Given this range in the scope and depth of analyses, not all risk characterizations can or should be equal in coverage or depth. The risk assessor must carefully decide which issues in a particular assessment are important to present, choosing those that are noteworthy in their impact on results. For example, health effect assessments typically rely on animal data since human data are rarely available. The objective of characterization of the use of animal data is not to recount generic issues about interpreting and using animal data. Agency guidance documents cover these. Instead, the objective is to call out any significant issues that arose within the particular assessment being characterized and inform the reader about significant uncertainties that affect conclusions.

### *5.3. Presentation of Risk Characterization Summary*

The presentation is a nontechnical discussion of important conclusions, issues, and uncertainties that uses the hazard, dose-response, exposure, and integrative analyses for technical support. The primary technical supports within the risk assessment are the hazard characterization, dose response characterization, and exposure characterization described in this guideline. The risk characterization is derived from these. The presentation should fulfill the aims outlined in the purpose section above.

### *5.4. Content of Risk Characterization Summary*

Specific guidance on hazard, dose response, and exposure characterization appears in previous sections. Overall, the risk characterization routinely includes the following, capturing the important items covered in hazard, dose response, and exposure characterization.

—Primary conclusions about hazard, dose response, and exposure, including equally plausible alternatives,

- —Nature of key supporting information and analytic methods,
- —Risk estimates and their attendant uncertainties, including key uses of default assumptions when data are missing or uncertain,
- —Statement of the extent of extrapolation of risk estimates from observed data to exposure levels of interest (i.e., margin of exposure) and its implications for certainty or uncertainty in qualtifying risk,
- —Significant strengths and limitations of the data and analyses, including any major peer reviewers' issues,
- —Appropriate comparison with similar EPA risk analyses or common risks with which people may be familiar, and
- —Comparison with assessment of the same problem by another organization.

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## APPENDIX A

This appendix contains several general illustrations of weight of evidence narratives. In addition, after narrative #5 is an example of a briefing summary format.

### *NARRATIVE #1 Chlorinated Alkene*

*CAS# XXX*

### *CANCER HAZARD SUMMARY*

Chlorinated alkene (cl-alkene) is likely to be carcinogenic to humans by all routes of exposure. The weight of evidence of human carcinogenicity of cl-alkene is based on (a) findings of carcinogenicity in rats and mice of both sexes by oral and inhalation exposures; (b) its similarity in structure to other chlorinated organics that are known to cause liver and kidney damage, and liver and kidney tumors in rats and mice; (c) suggestive evidence of a possible association between cl-alkene exposure of workers in the laundry and dry cleaning industries and increased cancer risk in a number of organ systems; and (d) human and animal data indicating that cl-alkene is absorbed by all routes of exposure.

In comparison with other agents designated as likely carcinogens, the overall weight of evidence for cl-alkene places it at the low end of the grouping. This is because one cannot attribute observed excess cancer risk in exposed workers solely to cl-alkene. Moreover, there is considerable scientific uncertainty about the human significance and relevance of certain rodent tumors associated with exposure to cl-alkene and other chlorinated organics, but insufficient evidence about mode of action for the animal tumors. Hence, the human relevance of the animal evidence of carcinogenicity relies on a default assumption of relevance.

There is no clear evidence about the mode of action for each tumor type induced in rats and mice. Available evidence suggests that cl-alkene induces cancer mainly by promoting cell growth rather than via direct mutagenic action, although a mutagenic mode of action for rat kidney tumors cannot be ruled out. The dose response assessment should, therefore, adopt both default approaches, nonlinear and linear. It is recognized that the latter approach likely overestimates risk at low doses if the mode of action is primarily growth-promoting. This approach, however, may be useful for screening analyses.

### SUPPORTING INFORMATION

#### Human Data

A number of epidemiologic studies of dry cleaning and laundry workers that have reported elevated incidences of lung, cervix, esophagus, kidney, blood and lymphoid cancers. Many of these studies are confounded by co-exposure to other petroleum solvents, making them limited for determining whether the observed increased cancer risks are causally related to cl-alkene. The only investigation of dry cleaning workers with no known exposure to other chemicals did not evaluate other confounding factors such as smoking, alcohol consumption, and low socioeconomic status to exclude the possible contribution of these factors to cancer risks.

#### Animal Data

The carcinogenic potential of cl-alkene has been adequately investigated in two chronic studies in two rodent species, the first study by gavage and the second study by inhalation. Cl-alkene is carcinogenic in the liver in both sexes of mice when tested by either route of exposure. It causes marginally increased incidences of mononuclear cell leukemia (MCL) in both sexes of rats and low incidences of a rare kidney tumor in male rats by inhalation. No increases in tumor incidence were found in rats treated with cl-alkene by gavage. This rat study was considered limited because of high mortality of the animals.

Although cl-alkene causes increased incidences of tumors at multiple sites in two rodent species, controversy surrounds each of the tumor endpoints concerning their relevance and/or significance to humans (see discussion under Mode of Action).

### Other Key Data

Cl-alkene is a member of a class of chlorinated organics that often cause liver and kidney toxicity and carcinogenesis in rodents. Like many chlorinated hydrocarbons, cl-alkene itself is tested negative in a battery of standard genotoxicity tests using bacterial and mammalian cells systems including human lymphocytes and fibroblast cells. There is evidence, however, that a minor metabolite generated by an enzyme found in rat kidney tissue is mutagenic. This kidney metabolite has been hypothesized to be related to the development of kidney tumors in the male rat. This metabolic pathway appears to be operative in the human kidney.

Human data indicate that cl-alkene is readily absorbed via inhalation but to a much lesser extent by skin contact. Animal data show that cl-alkene is absorbed well by the oral route.

## MODE OF ACTION

The mechanisms of cl-alkene-induced mouse liver tumors are not completely understood. One mechanism has been hypothesized to be mediated by a genotoxic epoxide metabolite generated by enzymes found in the mouse liver, but there is a lack of direct evidence in support of this mechanism. A more plausible mechanism that still needs to be further defined is related to liver peroxisomal proliferation and toxicity by TCA (trichloroacetic acid), a major metabolite of cl-alkene. However, there are no definitive data indicating that TCA induces peroxisomal proliferation in humans.

The mechanisms by which cl-alkene induces kidney tumors in male rats are even less well understood. The rat kidney response may be related to either kidney toxicity or the activity of a mutagenic metabolite of the parent compound.

The human relevance of cl-alkene-induced MCL in rats is unclear. The biological significance of marginally increased incidences of MCL has been questioned by some, since this tumor occurs spontaneously in the tested rat strain at very high background rates. On the other hand, it has been considered by others to be a true finding because there was a decreased time to onset of the disease and the disease was more severe in treated as compared with untreated control animals. The exact mechanism by which cl-alkene increases incidences of MCL in rats is not known.

Overall, there is not enough evidence to give high confidence in a conclusion about any single mode of action; it would appear that more than a single mode operates in different rodent tissues. The apparent lack of mutagenicity of cl-alkene itself and its general growth-promoting effect on high background tumors as well as its toxicity toward mouse liver and rat kidney tissue support the view that its predominant mode of action is cell growth promoting rather than mutagenic. A mutagenic contribution to the renal carcinogenicity due to a metabolite cannot be entirely ruled out.

## *NARRATIVE #2*

### *Unsaturated Aldehyde*

### *CAS# XXX*

## *CANCER HAZARD SUMMARY*

The potential human hazard of unsaturated aldehyde (UA) cannot be determined, but there are suggestive data for carcinogenicity.

The evidence on carcinogenicity consists of (a) data from an oral animal study showing a response only at the highest dose in female rats, with no response in males and (b) the fact that other low-molecular-weight aldehydes have shown tumorigenicity in the respiratory tract after inhalation. The one study of UA effects by the inhalation route was not adequately performed. The available evidence is too limited to describe human carcinogenicity potential or support dose response assessment.

## SUPPORTING INFORMATION

### Human Data

An elevated incidence of cancer was reported in a cohort of workers in a chemical plant who were exposed to a mixture of chemicals including UA as a minor component. The study is considered inadequate because of the small size of the cohort studied and the lack of adequate exposure data.

### Animal Data

In a long-term drinking water study in rats, an increased incidence of adrenal cortical adenomas was found in the highest-dosed females. No other significant finding was made. The oral rat study was well conducted by a standard protocol. In a 1-year study in hamsters at one inhalation dose, no tumors were seen. This study was inadequate due to high mortality and consequent short duration. The chemical is very irritating and is a respiratory toxicant in mammals. The animal data are too limited for conclusions to be drawn.

### Structural Analogue Data

UA's structural analogues, formaldehyde and acetaldehyde, both have carcinogenic effects on the rat respiratory tract.

### Other Key Data

The weight of results of mutagenicity tests in bacteria, fungi, fruit flies, and mice result in an overall conclusion of not mutagenic; UA is lethal to bacteria to a degree that makes testing difficult and test results difficult to interpret. The chemical is readily absorbed by all routes.

### MODE OF ACTION

Data are not sufficient to judge whether there is a carcinogenic mode of action.

## *NARRATIVE #3*

## *Alkene Oxide*

*CAS# XXX*

### *CANCER HAZARD SUMMARY*

Alkene oxide (AO) should be dealt with as if it were a known human carcinogen by all routes of exposure. Several studies in workers, when considered together, suggest an elevated risk of leukemia and lymphoma after long-term exposure to AO, even though no single study conclusively demonstrates that AO caused the cancer. In addition, animal cancer and mutagenicity studies as well as short-term tests of mutagenicity have strongly consistent results that support a level of concern equal to having conclusive human studies.

The weight of evidence of human carcinogenicity is based on (a) consistent evidence of carcinogenicity of AO in rats and mice by both oral and inhalation exposure; (b) studies in workers that taken together suggest elevated risk of leukemia and lymphoma to workers exposed to AO and show genetic damage in blood lymphocytes in exposed workers; (c) mutagenic effects in numerous test systems and heritable gene mutations in animals; and (d) membership in a class of DNA-reactive compounds that are regularly observed to cause cancer in animals.

Due to its ready absorption by all routes of exposure and rapid distribution throughout the body, AO is expected to pose a risk by any route of exposure. The strong evidence of a mutagenic mode of action supports dose response assessment that assumes linearity of the relationship.

### SUPPORTING INFORMATION

### Human Data

Elevated risks of lymphatic cancer and cancer of blood-forming tissue have been reported in exposed workers in several studies. The interpretation of the studies separately is complicated by exposures to other agents in each so there is no single study that demonstrates that AO caused the effects; nevertheless, several of the studies together are considered suggestive of AO carcinogenicity because they consistently show cancer elevation in the same tissues. Biomonitoring studies of exposed workers find DNA damage in blood lymphocytes and the degree of DNA damage correlates with the level and duration of AO exposure. Finding this damage in the same tissue in which elevated cancer was seen in workers adds further weight to the positive suggestion from the worker cancer studies. The human data are from well-conducted studies.

### Animal Data

AO causes cancer in multiple tissue sites in rats and mice of both sexes by oral and inhalation exposure. The database is more extensive than usual and the studies are good. The observation of multisite, multispecies carcinogenic activity by an agent is considered to be very strong evidence and is often the case with highly mutagenic agents. There are also good studies showing that AO causes heritable germ cell mutations in mice after inhalation exposure—a property that is very highly correlated with carcinogenicity.

### Structural Analogue Data

Organic epoxides are commonly found to have carcinogenic effects in animals, particularly the low-molecular-weight ones.

### Other Key Data

The structure and DNA reactivity of AO support potential carcinogenicity. Both properties are highly correlated with carcinogenicity. Positive mutagenicity tests in vitro and in vivo add to this support and are reinforced by observation of similar genetic damage in exposed workers.

AO is experimentally observed to be readily absorbed by all routes and rapidly distributed through the body.

## MODE OF ACTION

All of the available data are strongly supportive of a mutagenic mode of action, with a particular human target in lymphatic and blood-forming tissue. The current scientific consensus is that there is virtually complete correspondence between ability of an agent to cause heritable germ cell mutations, as AO does, and carcinogenicity. All of this points to a mutagenic mode of action and supports assuming linearity of the dose response relationship.

## *NARRATIVE #4*

### *Bis-benzenamine*

### *CAS# XXX*

## *CANCER HAZARD SUMMARY*

This chemical is likely to be carcinogenic to humans by all routes of exposure. Its carcinogenic potential is indicated by (a) tumor and toxicity studies on structural analogues, which demonstrate the ability of the chemical to produce thyroid follicular cell tumors in rats and hepatocellular tumors in mice following ingestion and (b) metabolism and hormonal information on the chemical and its analogues, which contributes to a working mode of action and associates findings in animals with those in exposed humans. In comparison with other agents designated as likely carcinogens, the overall weight of evidence for this chemical places it at the lower end of the grouping. This is because there is a lack of tumor response data on this agent itself.

Biological information on the compound is contradictory in terms of how to quantitate potential cancer risks. The information on disruption on thyroid-pituitary status argues for using a margin of exposure evaluation. However, the chemical is an aromatic amine, a class of agents that are DNA-reactive and induce gene mutation and chromosome aberrations, which argues for low-dose linearity. Additionally, there is a lack of mode of action information on the mouse liver tumors produced by the structural analogues, also pointing toward a low-dose linear default approach. In recognition of these uncertainties, it is recommended to quantitate tumors using both nonlinear (to place a lower bound on the risks) and linear (to place an upper bound on the risks) default approaches. Given the absence of tumor response data on the chemical per se, it is recommended that tumor data on close analogues be used to possibly develop toxicity equivalent factors or relative potencies.

Overall, this chemical is an inferential case for potential human carcinogenicity. The uncertainties associated with this assessment include (1) the lack of carcinogenicity studies on the chemical, (2) the use of tumor data on structural analogues, (3) the lack of definitive information on the relevance of thyroid-pituitary imbalance for human carcinogenicity, and (4) the different potential mechanisms that may influence tumor development and potential risks.

## SUPPORTING INFORMATION

### Human Data

Worker exposure has not been well characterized or quantified, but recent medical monitoring of workers exposed over a period of several years has uncovered alterations in thyroid-pituitary hormones (a decrease in T3 and T4 and an increase in TSH) and symptoms of hypothyroidism. A urinary metabolite of the chemical has been monitored in workers, with changes in thyroid and pituitary hormones noted, and the changes were similar to those seen in an animal study.

### Animal Data

The concentration of the urinary metabolite in rats receiving the chemical for 28 days was within twofold of that in exposed workers, a finding associated with comparable changes in thyroid hormones and TSH levels. In addition, the dose of the chemical given to rats in this study was essentially the same as that of an analogue that had produced thyroid and pituitary tumors in rats. The human thyroid responds in the same way as the rodent thyroid following short-term, limited exposure. Although it is not well established that thyroid-pituitary imbalance leads to cancer in humans as it does in rodents, information in animals and in exposed humans suggests similar mechanisms of disrupting thyroid-pituitary function and the potential role of altered TSH levels in leading to thyroid carcinogenesis.

### Structural Analogue Data

This chemical is an aromatic amine, a member of a class of chemicals that has regularly produced carcinogenic effects in rodents and gene and structural chromosome aberrations in short-term tests. Some aromatic amines have produced cancer in humans.

Close structural analogues produce thyroid follicular cell tumors in rats and hepatocellular tumors in mice following ingestion. The thyroid tumors are associated with known perturbations in thyroid-pituitary functioning. These compounds inhibit the use of iodide by the thyroid gland, apparently due to inhibition of the enzyme that synthesizes the thyroid hormones (T3, T4). Accordingly, blood levels of thyroid hormones decrease, which induce the pituitary gland to produce more TSH, a hormone that stimulates the thyroid to produce more of its hormones. The thyroid gland becomes larger due to increases in the size of individual cells and their proliferation and upon chronic administration, tumors develop. Thus, thyroid tumor development is significantly influenced by disruption in the thyroid-pituitary axis.

### Other Key Data

The chemical can be absorbed by the oral, inhalation, and dermal routes of exposure.

## MODE OF ACTION

Data on the chemical and on structural analogues indicate the potential association of carcinogenesis with perturbation of thyroid-pituitary homeostasis. Structural analogues are genotoxic, thus raising the possibility of different mechanisms by which this chemical may influence tumor development.

## *NARRATIVE #5*

### *Brominated Alkane (BA)*

### *CAS# XXX*

## *CANCER HAZARD SUMMARY*

Brominated alkane (BA) is likely to be a human carcinogen by all routes of exposure. The weight of evidence for human carcinogenicity is at the high end of agents in the "likely" group. Findings are based on very extensive and significant experimental findings that include (a) tumors at multiple sites in both sexes of two rodent species via three routes of administration relevant to human exposure, (b) close structural analogues that produce a spectrum of tumors like BA, (c) significant evidence for the production of reactive BA metabolites that readily bind to DNA and produce gene mutations in many systems including cultured mammalian and human cells, and (d) two null and one positive epidemiologic study; in the positive study, there may have been exposure to BA. These findings support a decision that BA might produce cancer in exposed humans. In comparison to other agents considered likely human carcinogens, the overall weight of evidence for BA puts it near the top of the grouping. Given the agent's mutagenicity, which can influence the carcinogenic process, a linear dose-response extrapolation is recommended.

Uncertainties include the lack of adequate information on the mutagenicity of BA in mammals or humans in vivo, although such effects would be expected.

## SUPPORTING INFORMATION

### Human Data

The information on the carcinogenicity of BA from human studies is inadequate. Two studies of production workers have not shown significant increases in cancer from exposure to BA and other chemicals. An increase in lymphatic cancer was reported in a mortality study of grain elevator workers who may have been exposed to BA (and other chemicals).

### Animal Data

BA produced tumors in four chronic rodents studies. Tumor increases were noted in males and females of rats and mice following oral dermal and inhalation exposure (rat—oral and two inhalation, mouse—oral and dermal). It produces tumors both at the site of application (e.g., skin with dermal exposure) and at sites distal to the portal of entry into the body (e.g., mammary gland) following exposure from each route. Tumors at the same site were noted in both sexes of a species (blood vessel), both species (forestomach) and via different routes of administration (lung). Some tumors developed after very short latency, metastasized extensively, and produced death, an uncommon findings in rodents. The rodent studies were well designed and conducted except for the oral studies, in which the doses employed caused excessive toxicity and mortality. However, given the other rodent findings, lower doses would also be anticipated to be carcinogenic.

### Structural Analogue Data

Several chemicals structurally related to BA are also carcinogenic in rodents. Among four that are closest in structure, tumors like those seen for BA were often noted (e.g., forestomach, mammary, lung), which helps to confirm the findings for BA itself. In sum, all of the tumor findings help to establish animal carcinogenicity and support potential human carcinogenicity for BA.

### Other Key Data

BA itself is not reactive, but from its structure it was expected to be metabolized to reactive forms. Extensive metabolism studies have confined this presumption and have demonstrated metabolites that bind to DNA and cause breaks in the DNA chain. These lesions are readily converted to gene mutations in bacteria, fungi, higher plants, insects and mammalian and human cells in culture. There are only a limited number of reports on the induction of chromosome aberrations in mammals and humans; thus far they are negative.

## MODE OF ACTION

Human carcinogens often produce cancer in multiple sites of multiple animal species and both sexes and are mutagenic in multiple test systems. BA satisfies these findings. It produces cancer in males and females of rats and mice. It produces gene mutations in cells across all life forms—plants, bacteria and animals—including mammals and humans. Given the mutagenicity of BA exposure and the multiplicity and short latency of BA tumor induction, it is reasonable to use a linear approach for cancer dose-response extrapolation.

## BRIEFING SUMMARY

| Route(s) | Class | Designation or rationale | Dose response |
|---|---|---|---|
| All ........................................ | Likely ........................................ | High end ................................ | Default-linear. |

*Basis for classification / dose response*

1. Human data: Two studies of production workers show no increase in cancer (one had a small sample size; the other had mixed chemical exposures). An increase in lymphatic cancer is seen among grain elevator workers who may have been exposed to other chemicals.

2. Animal data: BA produces tumors at multiple sites in male and female rats and mice following oral, dermal, and inhalation exposure. Tumors are seen at the site of administration and distally and are often consistent across sex, species, and route of administration; some develop early, metastasize, and cause death.

3. Structural analogue data: Close analogues produce some of the same tumors as are seen with BA.

4. Other key data: BA is metabolized to a reactive chemical that binds DNA and produces gene mutations in essentially every test system including cultured human cells.

5. Mode of action: Like most known human carcinogens, BA is mutagenic in most test systems.

6. Hazard classification/uncertainties: There is a rich database on BA demonstrating its potential ability to cause tumors in humans, including (a) multiple animal tumors, (b) by appropriate routes of exposure, (c) a mode of action relevant to human carcinogenicity, and (d) some information in humans. Together they lead to a designation near the high end of the *likely* human carcinogen class.

7. Dose response: Given the anticipated mode of action, a linear default dose response relationship should be assumed.

## APPENDIX B

This appendix contains responses to the National Academy of Sciences National Research Council report Science and Judgment in Risk Assessment (NRC, 1994).

*Recommendations of the National Academy of Sciences National Research Council*

In 1994, the National Academy of Sciences published a report Science and Judgment in Risk Assessment. The 1994 report was written by a Committee on Risk Assessment of Hazardous Air Pollutants formed under the Academy's Board on Environmental Studies and Toxicology, Commission on Life Sciences, National Research Council. The report was called for under Section 112(o)(1)(A,B) of the Clean Air Act Amendments of 1990, which provided for the EPA to arrange for the Academy to review:

—risk assessment methodology used by the EPA to determine the carcinogenic risk associated with exposure to hazardous air pollutants from source categories and subcategories subject to the requirements of this section and

—improvements in such methodology.

Under Section 112(o)(2)(A,B), the Academy was to consider the following in its review:

—the techniques used for estimating and describing the carcinogenic potency to humans of hazardous air pollutants and

—the techniques used for estimating exposure to hazardous air pollutants (for hypothetical and actual maximally exposed individuals as well as other exposed individuals).

To the extent practicable, the Academy was also to review methods of assessing adverse human health effects other than cancer for which safe thresholds of exposure may not exist [Section 112(o)(3)]. The Congress further provided that the EPA Administrator should consider, but need not adopt, the recommendations in the report and the views of the EPA Science Advisory Board with respect to the report. Prior to the promulgation of any standards under Section 112(f), the Administrator is to publish revised guidelines for carcinogenic risk assessment or a detailed explanation of the reasons that any recommendations contained in the report will not be implemented [Section 112(o)(6)].

The following discussion addresses the recommendations of the 1994 report that are pertinent to the EPA cancer risk assessment guidelines. Guidelines for assessment of exposure, of mixtures, and of other health effects are separate EPA publications. Many of the recommendations were related to practices specific to the exposure assessment of hazardous air pollutants, which are not covered in cancer assessment guidelines. Recommendations about these other guidelines or practices are not addressed here.

*Hazard Classification*

The 1994 report contains the following recommendation about classifying cancer hazard:

—The EPA should develop a two-part scheme for classifying evidence on carcinogenicity that would incorporate both a simple classification and a narrative evaluation. At a minimum, both parts should include the strength (quality) of the evidence, the relevance of the animal model and results to humans, and the relevance of the experimental exposures (route, dose, timing, and duration) to those likely to be encountered by humans.

The report also presented a possible matrix of 24 boxes that would array weights of evidence against low, medium, or high relevance, resulting in 24 codes for expressing the weight and relevance.

These guidelines adopt a set of descriptors and subdescriptors of weight of evidence in three categories: "known/likely," "cannot be determined," and "not likely," and a narrative for presentation of the weight of evidence findings. The descriptors are used within the narrative. There is no matrix of alphanumerical weight of evidence boxes.

The issue of an animal model that is not relevant to humans has been dealt with by not including an irrelevant response in the weighing of evidence, rather than by creating a weight of evidence then appending a discounting factor as the NRC scheme would do. The issue is more complex than the NRC matrix makes apparent. Often the question of relevance of the animal model applies to a single tumor response, but one encounters situations in which there are more tumor responses in animals than the questioned one. Dealing with this complexity is more straightforward if it is done during the weighing of evidence rather than after as in the NRC scheme. Moreover, the same experimental data are involved in deciding on the weight of evidence and the relevance of a response. It would be awkward to go over the same data twice.

In recommending that the relevance of circumstances of human exposure also be taken into account, the NRC appears to assume that all of the actual conditions of human exposure will be known when the classification is done. This is not the case. More often than not, the hazard assessment is applied to assessment of risks associated with exposure to different media or environments at different times. In some cases, there is no priority to obtaining exposure data until the hazard assessment has been done. The approach of these guidelines is to characterize hazards as to whether their expression is intrinsically limited by route of exposure or by reaching a particular dose range based strictly on toxicological and other biological features of the agent. Both the use of descriptors and the narrative specifically capture this information. Other aspects of appropriate application of the hazard and dose response assessment to particular human exposure scenarios are dealt with in the characterization of the dose response assessment, e.g., the applicability of the dose response assessment to scenarios with differing frequencies and durations.

The NRC scheme apparently intended that the evidence would be weighed, then given a low, medium, or high code for some combination of relevance of the animal response, route of exposure, timing, duration, or frequency. The 24 codes contain none of this specific information, and in fact, do not communicate what the conclusion is about. To make the codes communicate the information apparently intended would require some multiple of the 24 in the NRC scheme. As the number of codes increases, their utility for communication decreases.

Another reason for declining to use codes is that they tend to become outdated as research reveals new information that was not contemplated when they were adopted. This has been the case with the classification system under the EPA, 1986 guidelines.

Even though these guidelines do not adopt a matrix of codes, the method they provide of using descriptors and narratives captures the information the NRC recommended as the most important, and in the EPA's view, in a more transparent manner.

*Dose Response*

—The 1994 report contains the following recommendations about dose response issues:

—EPA should continue to explore, and when scientifically appropriate, incorporate toxicokinetic models of the link between exposure and biologically effective dose (i.e., dose reaching the target tissue).

—Despite the advantages of developing consistent risk assessments between agencies by using common assumptions (e.g., replacing surface area with body weight to the 0.75 power), EPA should indicate other methods, if any, that would be more accurate.

—EPA should continue to use the linearized multistage model as a default option but should develop criteria for determining when information is sufficient to use an alternative extrapolation model.

—EPA should continue to use as one of its risk characterization metrics upper-bound potency estimates of the probability of developing cancer due to lifetime exposure. Whenever possible, this metric should be supplemented with other descriptions of cancer potency that might more adequately reflect the uncertainty associated with the estimates.

—EPA should adopt a default assumption for differences in susceptibility among humans in estimating individual risks.

—In the analysis of animal bioassay data on the occurrence of multiple tumor types, the cancer potencies should be estimated for each relevant tumor type that is related to exposure and the individual potencies should be summed for those tumors.

The use of toxicokinetic models is encouraged in these guidelines with discussion of appropriate considerations for their use. When there are questions as to whether such a model is more accurate in a particular case than the default method for estimating the human equivalent dose, both alternatives may be used. It should be noted that the default method for inhalation exposure is a toxicokinetic model.

The rationale for adopting the oral scaling factor of body weight to the 0.75 power has been discussed above in the explanation of major defaults. The empirical basis is further explored in U.S. EPA, 1992b. The more accurate approach is to use a toxicokinetic model when data become available or to modify the default when data are available as encouraged under these guidelines. As the U.S. EPA, 1992b discussion explores in depth, data on the differences among animals in response to toxic agents are basically consistent with using a power of 1.0, 0.75, or 0.66. The Federal agencies chose the power of 0.75 for the scientific reasons given in the previous discussion of major defaults; these were not addressed specifically in the NRC report. It was also considered appropriate, as a matter of policy, for the agencies to agree on one factor. Again, the default for inhalation exposure is a model that is constructed to become better as more agent-specific data become available.

The EPA proposes not to use a computer model such as the linearized multistage model as a default for extrapolation below the observed range. The reason is that the basis for default extrapolation is a theoretical projection of the likely shape of the curve considering mode of action. For this purpose, a computer model looks more sophisticated than a straight line extrapolation, but is not. The extrapolation will be by straight line as explained in the explanation of major defaults. This was also recommended by workshop reviewers of a previous draft of these guidelines (U.S. EPA, 1994b). In addition, a margin of exposure analysis is proposed to be used in cases in which the curve is thought to be nonlinear, based on mode of action. In both cases, the observed range of data will be modeled by curve fitting in the absence of supporting data for a biologically based or case-specific model.

The result of using straight line extrapolation is thought to be an upper bound on low-dose potency to the human population in most cases, but as discussed in the major defaults section, it may not always be. Exploration and discussion of uncertainty of parameters in curve-fitting a model of the observed data or in using a biologically based or case-specific model is called for in the dose response assessment and characterization sections of these guidelines.

The issue of a default assumption for human differences in susceptibility has been addressed under the major defaults discussion in section 1.3 with respect to margin of exposure analysis. The EPA has considered but decided not to adopt a quantitative default factor for human differences in susceptibility when a linear extrapolation is used. In general, the EPA believes that the linear extrapolation is sufficiently conservative to protect public health. Linear approaches (both LMS and straight line extrapolation) from animal data are consistent with linear extrapolation on the same agents from human data (Goodman and Wilson, 1991; Hoel and Portier, 1994). If actual data on human variability in sensitivity are available they will, of course, be used.

In analyzing animal bioassay data on the occurrence of multiple tumor types, these guidelines outline a number of biological and other factors to consider. The objective is to use these factors to select response data (including nontumor data as appropriate) that best represent the biology observed. As stated in section 3 of the guidelines, appropriate options include use of a single data set, combining data from different experiments, showing a range of results from more than one data set, showing results from analysis of more than one tumor response based on differing modes of action, representing total response in a single experiment by combining animals with tumors, or a combination of these options. The approach judged to best represent the data is presented with the rationale for the judgment, including the biological and statistical considerations involved. The EPA has considered the approach of summing tumor incidences and decided not to adopt it. While multiple tumors may be independent, in the sense of not arising from metastases of a single malignancy, it is not clear that they can be assumed to represent different effects of the agent on cancer processes. In this connection, it is not clear that summing incidences provides a better representation of the underlying mode(s) of action of the agent than combining animals with tumors or using another of the several options noted above. Summing incidences would result in a higher risk estimate, a step that appears unnecessary without more reason.

*Risk Characterization*

—When EPA reports estimates of risk to decisionmakers and the public, it should present not only point estimates of risk, but also the sources and magnitudes of uncertainty associated with these estimates.

—Risk managers should be given characterizations of risk that are both qualitative and quantitative, i.e., both descriptive and mathematical.

—EPA should consider in its risk assessments the limits of scientific knowledge, the remaining uncertainties, and the desire to identify errors of either overestimation or underestimation.

In part as a response to these recommendations, the Administrator of EPA issued guidelines for risk characterization and required implementation plans from all programs in EPA (U.S. EPA, 1995). The Administrator's guidance is followed in these cancer guidelines. The assessments of hazard, dose response, and exposure will all have accompanying technical characterizations covering issues of strengths and limitations of data and current scientific understanding, identification of defaults utilized in the face of gaps in the former, discussions of controversial issues, and discussions of uncertainties in both their qualitative, and as practicable, their quantitative aspects.

## APPENDIX C

### *Overview of Cancer Processes*

The following picture is changing as research reveals more about carcinogenic processes. Nevertheless, it is apparent that several general modes of action are being elucidated from direct reaction with DNA to hormonal or other growth-signaling processes. While the exact mechanism of action of an agent at the molecular level may not be clear from existing data, the available data will often provide support for deducing the general mode of action. Under these guidelines, using all of the available data to arrive at a view of the mode of action supports both characterization of human hazard potential and assessment of dose response relationships.

Cancers are diseases of somatic mutation affecting cell growth and differentiation. The genes that control cell growth, programmed cell death, and cell differentiation are critical to normal development of tissues from embryo to adult metazoan organisms. These genes continue to be critical to maintenance of form and function of tissues in the adult (e.g., Meyn, 1993) and changes in them are essential elements of carcinogenesis (Hsu et al., 1991; Kakizuka et al., 1991; Bottaro et al., 1991; Sidransky et al., 1991; Salomon et al., 1990; Srivastava et al., 1990). The genes involved are among the most highly conserved in evolution as evidenced by the great homology of many of them in DNA sequence and function in organisms as phylogenetically distant as worms, insects, and mammals (Auger et al., 1989a, b; Hollstein et al., 1991; Herschman, 1991; Strausfeld et al., 1991; Forsburg and Nurse, 1991).

Mutations affecting three general categories of genes have been implicated in carcinogenesis. Over 100 oncogenes have been found in human and animal tumors that act as dominant alleles, whereas there are about 10 known tumor suppressor genes that are recessive in action. The normal alleles of these genes are involved with control of cell division and differentiation; mutated alleles lead to a disruption in these functions. The third class are mutator genes that predispose the genome to enhanced mutagenic events that contribute further to the carcinogenic process.

Adult tissues, even those that are composed of rapidly replicating cells, maintain a constant size and cell number (Nunez et al., 1991) by balancing three cell fates: (1) continued replication, (2) differentiation to take on specialized functions, or (3) programmed cell death (apoptosis) (Raff, 1992; Maller, 1991; Naeve et al., 1991; Schneider et al., 1991; Harris, 1990). Neoplastic growth through clonal expansion can result from somatic mutations that inactivate control over cell fate (Kakizuka et al., 1991; deThe et al., 1991; Sidransky et al., 1992; Nowell, 1976).

Cancers may also be thought of as diseases of the cell cycle. For example, genetic diseases that cause failure of cells to repair DNA damage prior to cell replication predispose people to cancer. These changes are also frequently found in tumor cells in sporadic cancers. These changes appear to be particularly involved at points in cell replication called "checkpoints" where DNA synthesis or mitosis is normally stopped until DNA damage is repaired or cell death induced (Tobey, 1975). A cell that bypasses a checkpoint may acquire a heritable growth advantage. Similar effects on the cell cycle occur when mitogens such as hormones or growth factors stimulate cell growth. Rapid replication in response to tissue injury may also lead to unrepaired DNA damage that is a risk factor for carcinogenesis.

Normally a cell's fate is determined by a timed sequence of biochemical signals. Signal transduction in the cell involves chemical signals that bind to receptors, generating further signals in a pathway whose target in many cases is control of transcription of a specific set of genes (Hunter, 1991; Cantley et al., 1991; Collum and Alt, 1990). Cells are subject to growth signals from the same and distant tissues, e.g., endocrine tissues (Schuller, 1991). In addition to hormones produced by endocrine tissues, numerous soluble polypeptide growth factors have been identified that control normal growth and differentiation (Cross and Dexter, 1991; Wellstein et al., 1990). The cells responsive to a particular growth factor are those that express transmembrane receptors that specifically bind the growth factor.

Solid tumors develop in stages operationally defined as initiation, promotion, and progression (see, for example, Pitot and Dragan, 1991). These terms, which were coined in the context of specific experimental designs, are used for convenience in discussing concepts, but they refer to complex events that are not completely understood. During initiation, the cell acquires a genetic change that confers a potential growth advantage. During promotion, clonal expansion of this altered cell occurs. Later, during progression, a series of genetic and other biological events both enhance the growth advantage of the cells and enlist normal host processes to support tumor development and cells develop the ability to invade locally and metastasize distally, taking on the characteristics of malignancy. Many endogenous and exogenous factors are known to participate in the process as a whole. These include specific genetic predispositions or variations in ability to detoxify agents, medical history (Harris, 1989; Nebreda et al., 1991), infections, exposure to chemicals or ionizing radiation, hormones and growth factors, and immune suppression. Several such risk factors likely work together to cause individual human cancers.

A cell that has been transformed, acquiring the potential to establish a line of cells that grow to a tumor, will probably realize that potential only rarely. The process of tumorigenesis in animals and humans is a multistep one (Bouk, 1990; Fearon and Vogelstein, 1990; Hunter, 1991; Kumar et al., 1990; Sukumar, 1989; Sukumar, 1990) and normal physiological processes appear to be arrayed against uncontrolled growth of a transformed cell (Weinberg, 1989). Powerful inhibition by signals from contact with neighboring normal cells is one known barrier (Zhang et al., 1992). Another is the immune system (at least for viral infection). How a cell with tumorigenic potential acquires additional properties that are necessary to enable it to overcome these and other inhibitory processes is a subject of ongoing research. For known human carcinogens studied thus far, there is an often decades-long latency between exposure to carcinogenic agents and development of tumors (Fidler and Radinsky, 1990; Tanaka et al., 1991; Thompson et al., 1989). This latency is also typical of tumor development in individuals with genetic diseases that make them prone to cancer (Meyn, 1993; Srivastava et al., 1990).

The importance of genetic mutation in the carcinogenic process calls for special attention to assessing agents that cause such mutations. Heritable genetic defects that predispose humans to cancer are well known and the number of identified defects is growing. Examples include xeroderma pigmentosum (DNA repair defect) and Li Fraumeni and retinoblastoma (both are tumor suppressor gene mutations). Much of the screening and testing of agents for carcinogenic potential has been driven by the idea of identifying this mode of action. Cognizance of and emphasis on other modes of action such as ones that act at the level of growth signalling within or between cells, through cell receptors, or that indirectly cause genetic change, comes from more recent research. There are not yet standardized tests for many modes of action, but pertinent information may be available in individual cases.

Agents of differing characteristics influence cancer development: inorganic and organic, naturally occurring and synthetic, of inanimate or animate origin, endogenous or exogenous, dietary and nondietary. The means by which these agents act to influence carcinogenesis are variable, and reasoned hazard assessment requires consideration of the multiple ways that chemicals influence cells in experimental systems and in humans. Agents exert mutagenic effects either by interacting directly with DNA or by indirect means through intermediary substances (e.g., reactive oxygen species) or processes. Most DNA-reactive chemicals are electrophilic or can become electrophilic when metabolically activated. Electrophilic molecules may bind covalently to DNA to form adducts, and this may lead to depurination, depyrimidation, or produce DNA strand breaks; such lesions can be converted to mutations with a round of DNA synthesis and cell division. Other DNA-interactive chemicals may cause the same result by intercalation into the DNA helix. Still other chemicals may methylate DNA, changing gene expression. Non-DNA-reactive chemicals produce genotoxic effects by many different processes. They may affect spindle formation or chromosome proteins, interfere with normal growth control mechanisms, or affect enzymes involved with ensuring the fidelity of DNA synthesis (e.g., topoisomerase), recombination, or repair.

The "classical" chemical carcinogens in laboratory rodent studies are agents that consistently produce gene mutations and structural chromosome aberrations in short-term tests. A large database reveals that these mutagenic substances commonly produce tumors at multiple sites and in multiple species (Ashby and Tennant, 1991). Most of the carcinogens identified in human studies, aside from hormones, are also gene or structural chromosome mutagens (Tennant and Ashby, 1991). Most of these compounds or their metabolites contain electrophilic moieties that react with DNA.

Numerical chromosome aberrations, gene amplification, and the loss of gene heterozygosity are also found in animal and human tumor cells and may arise from initiating events or during progression. There is reason to believe that accumulation of additional genetic changes is favored by selection in the evolution of tumor cells because they confer additional growth advantages (Hartwell and Kastan, 1994). Exogenous agents may function at any stage of carcinogenesis (Barrett, 1993). Some aberrations may arise as a consequence of genomic instability arising from tumor suppressor gene mutation, e.g., p 53 (Harris and Hollstein, 1993). The frequent observation in tumor cells that both of a pair of homologous chromosomes have identical mutation spectra in tumor suppressor genes suggests an ongoing, endogenous process of gene conversion. Currently, there is a paucity of routine test methods to screen for events such as gene conversion or gene amplification and knowledge regarding the ability of particular agents of environmental interest to induce them is, for the most part, wanting. Work is under way to characterize, measure, and evaluate their significance (Travis et al., 1991).

Several kinds of mechanistic studies aid in risk assessment. Comparison of DNA lesions in tumor cells taken from humans with the lesions that a tumorigenic agent causes in experimental systems can permit inferences about the association of exposure to the agent and an observed human effect (Vahakangas et al., 1992; Hollstein et al., 1991; Hayward et al., 1991). An agent that is observed to cause mutations experimentally may be inferred to have potential for carcinogenic activity (U.S. EPA, 1991a). If such an agent is shown to be carcinogenic in animals, the inference that its mode of action is through mutagenicity is strong. A carcinogenic agent that is not mutagenic in experimental systems but is mitogenic or affects hormonal levels or causes toxic injury followed by compensatory growth may be inferred to have effects on growth signal transduction or to have secondary carcinogenic effects. The strength of these inferences depends in each case on the nature and extent of all the available data.

Differing modes of action at the molecular level have different dose response implications for the activity of agents. The carcinogenic activity of a direct-acting mutagen should be a function of the probability of its reaching and reacting with DNA. The carcinogenic activity of an agent that interferes at the level of signal pathways with many potential receptor targets should be a function of multiple reactions. The carcinogenic activity of an agent that acts by causing cell toxicity followed by compensatory growth should be a function of the toxicity.

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## AGENCY FTEs

Question: Although the proposed EPA budget is up, the FTEs are down and there appears to be a significant amount of outsourcing. How does EPA evaluate whether the amount of outsourcing is economically justified versus using federal employees? Is it possible that EPA is trying to meet an OMB ceiling that is too low for the Agency to optimally accomplish its mission while costing the taxpayer more than using its own employees as well as sacrificing institutional memory?

Answer: The Agency supports the Administration's effort to streamline the Federal workforce and is willing to do its fair share. While the overall reduction in Federal workyear levels has severely impacted some agencies, we have received some relief from the government wide percentage reduction, and, in fact, received 900 additional workyears for contractor conversion in FY 1995. These new hires were directed toward attaining the proper balance of Federal versus contractor support for EPA's mission, and provided savings to the government.

The uncertainties of the current fiscal year have had serious negative impacts on our ability to get the job done. We have lost over 1,000 of our employees in the last year, bringing us several hundred people below our FY 1997 ceiling. Our FY 1996 appropriation allows some hiring to fill critical vacancies for environmental priorities.

## ENHANCING STATE CAPABILITIES

Question: I am interested in what EPA has been doing with regard to assisting the States in developing their environmental programs. Could you describe what, if anything, EPA has been doing to help enhance state capabilities? Is the 30% cut in New Jersey's funding of environmental programs unique?

Answer: In the Spring of 1993, EPA issued the "Report of the Task Force to Enhance State Capacity: Strengthening Environmental Management in the United States." The report, written jointly by state and EPA officials, contains a broad array of recommendations to strengthen state capacity on policy, planning, management, finance, grants, and legislative changes.

EPA is proud to report that significant progress has been made implementing every one of the report's recommendations. Through the new Performance Partnership system, states can now opt to negotiate how and where EPA will support and enhance state capabilities across all programs. EPA also provides a variety of services to states on an on-going and as-needed basis. These include: emergency response; staff training; specialized technical assistance on permit reviews specialized technical assistance to local governments in meeting their environmental management responsibilities; streamlined grant award process, inspection, and enforcement actions; cooperative implementation of inspection programs; and laboratory and monitoring assistance.

The budget cuts in New Jersey's environmental programs are not a unique phenomenon. According to a survey done by the Council of State Governments in the fall of 1995, 23 states experienced budget cuts in 1995, a few as high as 36 percent. While budget cuts are not necessarily an indication of a weakening state program, they do signal the need for EPA to review a state's program performance more carefully to determine whether increased EPA oversight is warranted. The budget cuts are a matter of serious concern. While the Agency does not make a practice of intervening in the fiscal choices within any state, we remain concerned over the potential impact of these large cuts on the state's ability to maintain solid programs.

## USE OF PERMIT FEES FOR PERMIT STAFF

Question: Several companies and industries complain that in the global economy, it sometimes is necessary to change processes that can alter the pollution leaving the plant. However, their discharge permit may not be appropriate for their new waste stream. These companies complain it becomes difficult to get EPA or State permit writers to respond to these requests in a timely manner. In fact, some associations and companies have encouraged us to increase permit fees, if those fees can be earmarked for more permit staff. What do you think of this proposal?

Answer: The issue of timeliness in issuing permit modifications for a new waste stream and the subject of the permit system in general, is one that EPA understands has been a source of frustration for industry. Raising fees is one way to address the problem but is not the only way. Two years ago, EPA in response to industry, public, and state concerns, formed an Agency wide Permit Improvement Team that immediately engaged stakeholders in round table discussions on how to improve the current permit system.

The Permit Improvement Team has finished its analysis and has prepared a paper which examines the philosophy and practices of the nation's permitting systems and offers recommendations on how they can be made more efficient and effective. Specific recommendations include:

- expanding the use of general permits and permits by rule, especially in the storm water and hazardous waste programs;
- developing guidance to maximize operational flexibility and encourage pollution prevention in a permit;
- drafting generic performance measures to assess the timeliness of permits, level of compliance with permit conditions, and customer satisfaction;
- developing mechanisms to promote access to environmental information;
- finding ways to lessen reporting requirements for individual and general permits in exchange for reducing net emissions;
- creating a national inventory of all regulatory thresholds for permitting in one industrial sector;
- developing information packages to help provide local training;
- developing expert systems to help permit writers in drafting permits; and
- focusing EPA corrective action resources on states without cleanup programs.

These and other recommendations contained in the draft concept paper on environmental permitting are intended to provide an overall policy direction for EPA. The paper will be reviewed by the EPA's multi-stakeholder Common Sense Federal Advisory Committee this summer and submitted to the Administrator this fall.

Reinventing environmental permitting is a key aspect of our regulatory reinvention program and EPA intends to reform its own policies and work with the states through the performance partnership process to design a system that focuses on environmental results while eliminating unnecessary regulatory burden, including delays in processing permits, for industry.

## CERTIFYING EQUIPMENT FOR THE URBAN BUS RETROFIT PROGRAM

Question: As I mentioned in my opening statement, EPA has recently faced two shutdowns and a significant reduction in manpower. Yet the Agency has not seen its workload reduced; in fact, it has increased. This combination of shutdowns, reduced capabilities and increased demands, I believe, has an adverse impact on the Agency's ability to process its own paperwork so companies can meet the deadlines and requirements set down by the Agency. Specifically, a company in my state, Engelhard Corporation, the pioneer of catalytic converters, has submitted to EPA an application under the Urban Bus Retrofit Program to certify technology that will reduce the level of particulates generated by diesel buses. Engelhard has developed this important environmentally beneficial technology but EPA has not been able to find the resources to process the application in a timely fashion. Unless the deadline is modified to allow EPA to process Engelhard's new technology application, the benefits to public health envisioned by the Clean Air Act will not be fully realized. Given this situation, would EPA consider extending the deadline so that those living in urban areas can benefit from cleaner and healthier air?

Answer: EPA agrees with the Senator that the goal of the urban bus retrofit program is to achieve the greatest level of particulate matter reductions, consistent with the statutory and regulatory requirements. EPA was unable to grant an extension to the July 1, 1996 certification deadline because this could be in violation of program regulations and could jeopardize the competitive position of other bus retrofit equipment manufacturers. However, EPA has recently had several meetings with Engelhard Corporation in an attempt to reach a mutually agreeable resolution of this issue. Both EPA and Engelhard agree that revising the current regulations to establish a final certification deadline of July 1, 1997 is the most appropriate course of action. Engelhard's desire is that EPA complete this rulemaking as soon as possible. Although such rulemaking generally takes 12 months or more because of the need to publish proposed revisions and allow the opportunity for public review and comment, EPA will attempt to complete the final rulemaking by the end of calendar year 1996.

## EMISSIONS OF HARMFUL GREENHOUSE GASES

Question: The weather this year has been characterized by extremes -- from the Blizzard of 1996 to this week's record setting heat wave. The Intergovernmental Panel on Climate Change -- an international body of 1,200 word-renowned scientists -- recently issued a report finding that global climate change will manifest itself in increased incidence of extreme weather events. How does the Agency's FY97 request attempt to address emissions of harmful greenhouse gases?

Answer: The Agency's FY97 request includes funding of several programs that represent prudent, cost-effective, initial steps to reduce greenhouse gas (GHG) emissions. EPA has identified key opportunities to profitably reduce emissions and to lessen the risk of climate change, while saving energy, improving economic competitiveness, and creating jobs. The EPA programs are non-regulatory, market-oriented, voluntary partnerships that encourage investment in pollution prevention technologies and practices which decrease GHG emissions. The general public and organizations of every type and size, in every economic sector, benefit from these programs. And, EPA achieves these results without providing funds or any other form of monetary subsidy to program participants.

In general, EPA's voluntary partnership programs aim to break down market and institutional barriers to investments in reliable energy-efficient technologies. One of the principal market barriers is the lack of objective information on the capabilities and financial benefits of existing technologies and practices. EPA has proven itself to be a trusted and credible source of objective, technical information through programs such as the Green Lights and ENERGY STAR programs. The EPA voluntary partnership programs have a track record of success, including:

- $300 million dollars saved on the energy bills of small and large businesses, universities, schools and hospitals, freeing dollars for investments to increase productivity and create jobs,
- $100 million dollars saved on the energy bills of Federal, state and local governments, allowing more tax revenues to be spent on schools, libraries, fire and police departments, and
- 16 billion pounds of reduced greenhouse gas emissions.

The early leaders (who initially committed to these programs) are now joined by over 3,500 other organizations in demonstrating that voluntary partnerships work to protect the environment. EPA is using its status as the nation's caretaker of the environment to reach the public and gain the attention and commitment of organizations' senior management to ensure that pollution prevention opportunities are pursued that may otherwise be overlooked.

## ADVERSE EFFECTS ON HAZARDOUS WASTE CLEANUP PROGRAM

Question: If the costs associated with repealing polluter pays is more than the amount of the approximately $1.3 billion appropriated in a given year, could that adversely affect the Agency's hazardous waste clean up program?

Answer: Yes. The current Senate proposal for Superfund reauthorization would exempt certain parties for pre-1980 waste. In addition. the proposed reauthorization legislation would require revisiting past cleanup decisions and repeating some study, design and cleanup actions, which would result in additional costs. These provisions would significantly delay cleanups at the current funding level.

The FY 1997 Senate budget resolution proposed a Superfund reserve fund with additional funding up to $898 million, which is contingent on reauthorization of the Superfund program and taxes. Even with the additional funding, it is not clear whether it is possible to maintain the current pace of cleanup under the proposed legislation. EPA is currently in the process of analyzing the costs of the proposed legislation.

Although the budget resolution language does not restrict usage of the funds, it appears that Congressional intent is that the reserve fund would be used to pay for Superfund liability exemptions. The Agency believes that, as under the current program, polluters rather than taxpayers should pay for cleanups.

## MERCURY STUDY REPORT TO CONGRESS

Question: The Clean Air Act required a number of studies. One dealt with the sources and impacts of mercury on public health. I understand that the study is completed but is not being released. If part of the study is not in question why can't the rest of the study be made available to the Congress and the public?

Answer: The Clean Air Act requires the EPA to submit a comprehensive report to Congress on mercury. The report is to consider sources of mercury emissions, the public health and environmental impacts of such emissions, technologies available to control such emissions and the costs of such control. The Agency is awaiting new data from two new health studies on children of the Seychelles and Faroe Islands regarding the level of mercury exposure that is without effect. Without this information, the characterization of risk to public health is incomplete. The other sections of the report which deal with emissions, fate and transport of mercury in the environment, ecological impacts, and control technologies will be updated when the report is revised to incorporate the new human health data.

The sections we are considering for release as EPA technical reports include the emissions inventory (which would update previously published EPA inventories for mercury), the exposure assessment (which details fate and transport of mercury in the environment), an ecological assessment (which identifies "regions of concern" for various valued wildlife species), and the control technology and cost assessment (which addresses various management alternatives for mercury control). Although we believe these analyses will not be affected by the forthcoming data on human health effects, the Mercury Study has been referred to the EPA's Science Advisory Board (SAB) to obtain additional peer review in anticipation of a final revision to incorporate new human health studies. The SAB has also been asked to look at the models used to predict fate and transport of mercury and the social costs and benefits of mercury control. The SAB may recommend changes to these analyses. Because the activities of the SAB are public processes subject to the Federal Advisory Committee Act, the charge to the SAB and the materials being reviewed by the SAB are available to the public. No decision has yet been made whether to release any sections of the Mercury Study as final EPA technical documents.

## SUBCOMMITTEE RECESS

Senator BOND. Thank you very much. The hearing is recessed.

[Whereupon, at 11:08 a.m., Friday, June 7, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

# DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT AND INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1997

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**TUESDAY, JUNE 11, 1996**

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
*Washington, DC.*

The subcommittee met at 2:42 p.m., in room SD–138, Dirksen Senate Office Building, Hon. Christopher S. Bond (chairman) presiding.

Present: Senators Bond, Burns, Campbell, Mikulski, and Lautenberg.

## DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

### STATEMENT OF HENRY G. CISNEROS, SECRETARY

**ACCOMPANIED BY:**

- **DWIGHT ROBINSON, DEPUTY SECRETARY**
- **HAL DE CELL, ASSISTANT SECRETARY FOR CONGRESSIONAL AND INTERGOVERNMENTAL RELATIONS**
- **NICOLAS RETSINAS, ASSISTANT SECRETARY FOR HOUSING—FEDERAL HOUSING COMMISSIONER**
- **KEVIN MARCHMAN, DEPUTY ASSISTANT SECRETARY FOR DISTRESSED AND TROUBLED HOUSING RECOVERY, OFFICE OF PUBLIC AND INDIAN HOUSING**
- **KEVIN CHAVERS, PRESIDENT, GOVERNMENT NATIONAL MORTGAGE ASSOCIATION**
- **ANDREW CUOMO, ASSISTANT SECRETARY FOR COMMUNITY PLANNING AND DEVELOPMENT**
- **ELIZABETH JULIAN, ASSISTANT SECRETARY FOR FAIR HOUSING AND EQUAL OPPORTUNITY**
- **MARILYNN DAVIS, ASSISTANT SECRETARY FOR ADMINISTRATION**
- **JOHN KNUBEL, CHIEF FINANCIAL OFFICER**
- **AIDA ALVAREZ, DIRECTOR, OFFICE OF FEDERAL HOUSING ENTERPRISE OVERSIGHT**
- **PAUL LEONARD, DEPUTY ASSISTANT SECRETARY FOR POLICY DEVELOPMENT**
- **DAVID JACOBS, DIRECTOR, OFFICE OF LEAD-BASED PAINT**

### OPENING STATEMENT OF CHRISTOPHER S. BOND

Senator BOND. This hearing of the Subcommittee on Veterans Affairs, HUD, and Independent Agencies will come to order.

It is our great pleasure to welcome Secretary Henry Cisneros to this hearing on the President's request for the Department of

Housing and Urban Development for fiscal year 1997. As my colleagues know, originally this hearing was scheduled 1 month ago. It was postponed because of our deep misgivings and questions about the administration's overall budgetary proposals and in particular the implications of a more constrained congressional budgetary limitation for the Department's costly and complex programs.

I am pleased to note that during deliberations on the budget resolution we have increased amounts available for discretionary activities so that the fiscal year 1997 limitation in aggregate at least approaches a freeze, that is funding necessary to maintain current activities without adjusting for inflation.

While that is a positive step in moderating some of the most adverse consequences of these budgetary constraints on HUD programs, it does not take into account inflationary pressures on housing subsidies and the cost of public housing activities. For example, section 8 subsidies are based on market rental rates and failure to adjust for inflation means fewer families can be assisted.

These consequences are difficult enough to deal with without factoring other dynamics in the budget process which virtually preclude uniform application of such constraints on all agencies in Government or indeed, as we have well found out, on all agencies within one appropriations bill. One example of this is the appropriation for veterans medical care, which the administration is requesting a $400 million increase, about the same increase granted by Congress for the current fiscal year, but with an overall freeze, any increase for the VA would have to be taken from other agencies in the bill.

If the offset were taken from HUD, accommodating the VA increase would require a 10-percent across-the-board reduction, and that would be very difficult for us to accommodate.

I just use this example to illustrate the magnitude of the challenges confronting our subcommittee as we attempt to craft a bill which complies with our deficit reduction targets, yet is responsive to the many needs and concerns addressed by the agencies under our jurisdiction.

Over 1 year ago, immediately after becoming chairman of this subcommittee, I conveyed a series of special hearings on the budgetary and management crisis at HUD. We were very much aware of the magnitude of our budgetary problems and the urgency for sweeping reforms to improve efficiency, cut waste, and expand local flexibility. We knew then that if we acted quickly there was a chance that we could bring about reforms and cost reductions in time to enable us to sustain much of our past investment in housing and community development programs.

From that hearing we developed the fiscal year 1995 rescission and supplemental appropriations bill, which eliminated some $6.5 billion in excess subsidy commitments and enacted a comprehensive package of public housing and section 8 program reforms. The measure was enacted into law July of last year.

Next we developed a much more comprehensive package of reforms, building on our initial actions, and these were enacted in the Balanced Budget Deficit Down Payment Act and the Omnibus Consolidated Rescission and Appropriation Act, both of which became law earlier this year.

Now, seemingly without taking a breath, we are back at it again. Two weeks ago the House subcommittee marked up its fiscal year 1997 appropriations bill. Because of the requirements of a campaign and election year, we can have only a very narrow window in which to move the measure. While the House hopes to pass the bill before the July 4 holiday, there will remain only a few weeks under the legislative schedule for the Senate to pass and conference on the bill.

So I would hope that after this hearing we would get all our staffs together, get all the good ideas, the questions and concerns solved if we can, because when we come back from the Fourth of July we are going to have to hit running and really put it together and move it as quickly as we can.

In addition to putting my colleagues on notice as to the severity of the budgetary constraints, I hope this hearing will also provide us an opportunity to analyze the recommendations of the House subcommittee and help us develop a consensus on what further reforms are necessary, just as our hearings over 1 year ago helped us identify the priority reforms needed.

I may be naive, but, frankly, in this subcommittee at least I do not view the housing and community development issues as partisan measures. They can be very political and controversial since they affect people where they live, but rarely on an ideological basis.

The administration recently organized two large conferences on public housing and home ownership and, even in an election year, I have little quarrel with what was said. Vice President Gore urged more aggressive demolition of obsolete public housing, a goal which has been a priority of mine for years and been supported by Republicans and Democrats on this committee. President Clinton praised efforts to foster home ownership, again a view that both sides of the aisle in this committee support.

I will say, however, that just reaffirming popular themes is not enough for a coherent policy which addresses the magnitudes of problems confronting HUD. Demolishing failed public housing is a step, so long as it is part of an overall comprehensive housing affordability strategy. And these decisions have to come from the local communities, through the PHA's and the cities up. It is a very important precondition to going about the demolition process.

Second, while promoting home ownership is laudatory, a very necessary goal, one we all share, it does not really deal with all of the problems we face in our communities and cities.

This hearing is about identifying some strategies which address these major problems and within the onerous constraints of our budget. We will look forward to hearing your comments, Mr. Secretary.

But first let me turn to my distinguished ranking member, Senator Mikulski.

## STATEMENT OF BARBARA A. MIKULSKI

Senator MIKULSKI. Thank you very much, Mr. Chairman. And let me begin by welcoming Secretary Cisneros to the committee and also wishing him a happy birthday.

Secretary CISNEROS. Thank you.

Senator MIKULSKI. I know you are one of the latter day boomers, so we hope you have a better day than this hearing.

Secretary CISNEROS. I cannot think of a group I would rather spend my birthday with. [Laughter.]

Senator BOND. Mr. Secretary, your credibility. Your credibility is too good. Do not waste your credibility on that one. [Laughter.]

Senator MIKULSKI. Mr. Chairman, as you know, I have been a long advocate of effective housing and community development policies that focus on real results for real people, rather than focusing on rules and redtape. In my work as the chair of this subcommittee, now as the ranking member, I have fought hard for the people of Maryland and for this country, particularly as it affects the HUD programs.

My focus has been to get $1 dollars' worth of tax dollars spent on programs that help people. I want to see our tax dollars go to create hope and opportunity. I do not want to see the programs that we create to create what I call ZIP codes of pathology.

I am pleased that the NAPA report on HUD that I commissioned 2 years ago and that you followed and that the administration has been working with will help bring about long overdue reforms needed at HUD. Mr. Chairman, I also want to add I appreciate the efforts you have taken to make HUD programs operate more effectively.

I come here today with some mixed emotions. I am pleased that Secretary Cisneros has continued to move forward in the area of reforming HUD. During these times of budget cuts and fiscal restraints, I know that he is facing an enormous and significant challenge.

But I come here today with also a great deal of concern. I am concerned that we do not take a Band-Aid approach to curing deep systemic problems. I am concerned about HUD's role in effectively helping to empower residents of public housing and those who make use of subsidies related to creating hope and opportunity in the area of housing. I am concerned that moving people from neighborhood to neighborhood is not a comprehensive strategy to redevelop distressed communities.

Razing public housing in deplorable condition is an approach, not a problem. We must then have a whole series of approaches that helps empower people as they move to a new address. Changing an address does not also mean we change behavior. We have a whole set of rules and requirements that I believe reinforce the culture of poverty, rather than help people break the cycle of poverty.

I hope we help change, bring about change, by rewarding work, promoting family cohesion, and promoting family responsibility. Many of the problems we face exist within HUD housing authorities and sometimes within HUD management as well, particularly at the State level.

In my own Baltimore metropolitan area, HUD has had a very mixed record in terms of what it does, whether it is the public housing authorities plagued by abuse and mismanagement, whether it is the section 8 program and the way it has not been stood sentry, and the way we have failed to really monitor FHA-subsidized multifamily dwellings.

I hope that what we do is take a look at how we help people be able to help themselves. And I know, Mr. Secretary, you want to do that. I believe the elements for reform are in the NAPA report. And I noted with great interest the column about your four-step approach in the William Raspberry column, when you talk about why require economic failure for admission to public housing and evict people when they improve their economics?

I absolutely support that and, as you know, in many of our conversations we have said that the very rules that we have work against people as they help themselves. What does that mean? It means that if you work and you get more income, your rents go up and even make you ineligible for public housing. If you find someone you love and you establish a two-parent household and be on with promoting family cohesion, again incomes go up, out goes the family from either public housing or section 8.

I think there is something wrong with that, because we want to be sure that each effort is rewarded and each step leads to the next step. So I support your efforts in changing the rules to help bring about mixed income in public housing, which was one of the original approach, that as we tear down public housing we make sure the move does create hope and opportunity, but that we really work in those moves and make sure that we do not destabilize neighborhoods.

Again, in my own Baltimore metropolitan area the monitoring of section 8 has created a new class of slum landlords and has essentially helped bring about some neighborhood decline, shattering the hope of the very people that thought by moving to a neighborhood they were going to have an opportunity.

Mr. Cisneros, I know you have the one strike you are out in terms of the drug policy. I want you to know I absolutely support that, because we cannot have public housing or section 8 or FHA multifamily subsidized, supported, and mortgage-guaranteed housing become incubators of drug dealing. My concern is that the very nature of what we do and the way we do it works against the very thing we want to do, which is empower the poor and help them be able to help themselves, with each step being rewarded and leading to another step, that ultimately will result in home ownership.

I think that concludes my remarks and I look forward to the hearing.

Senator BOND. Thank you very much, Senator Mikulski.

Senator Burns.

## STATEMENT OF CONRAD BURNS

Senator BURNS. Thank you, Mr. Chairman, and welcome, Mr. Secretary. This afternoon I will just submit my statement for the record with a couple of statements.

Senator BOND. Without objection.

Senator BURNS. You know, our problem in Montana, Mr. Secretary, is just a little bit different than the one just described by my colleague from Baltimore. It seems like maybe you can make some moves there and they do not have to move very far, even move out of a neighborhood. In Montana, if we have shortages we have got a lot of dirt between light bulbs there, so when we have to move 10 miles you might not find affordable housing even if you can find it.

We have a drastic shortage in the State of Montana and, of course, as long as market rates for rent dictates even the subsidized rental we understand that we are being caught now in some substandard housing that just is not livable, even though it may be subsidized by the Government. So I think we ought to start taking a look at policy that actually increases incomes, and so let these families keep more, so they can do more for themselves, instead of taxing them to death and the Government trying to administer something when you lose all these dollars just for the administration of HUD.

### PREPARED STATEMENT

So with that, I think we should embark on that kind of a policy. I have got a couple of questions, and thank you very much, Mr. Chairman.

[The statement follows:]

### PREPARED STATEMENT OF SENATOR CONRAD BURNS

Mr. Chairman, I thank you for holding this hearing this morning. And I appreciate Secretary Cisneros joining us. HUD always seems to be one of the agencies that is under the gun and so your cooperation here today will help us to better understand the needs and the goals for HUD in fiscal year 1997.

As you know, Mr. Secretary, my housing concerns tend to focus on rural housing. We've got some real desperate situations in rural America—and in Montana, in particular. Housing shortages are increasing. And I don't just mean affordable housing. Try to find a rental home in Great Falls or Missoula and you're out of luck. So, you add to that the need for low-income housing, and the options are even more limited. And in rural Montana, you don't just wander ten miles down the road to another city. There's a lot of dirt between light bulbs.

I'm also concerned about the way some of these programs might be transitioned. I'm hearing from a lot of senior citizens, afraid of losing their housing if the rents are increased or the program qualification are changed. Sure, it might be panic on their part, but think we all know the situation many seniors are in. They live on Social Security checks and have everything budgeted so that they squeeze every dollar dry. I understand their concerns and so I'll be interested to hear how you plan to make changes as painless as possible.

I do have some questions for the Secretary, Mr. Chairman, and so I'll make this opening statement short. I do appreciate you being here, Mr. Secretary and I look forward to hearing your remarks.

Senator BOND. Thank you, Senator Burns.

Senator Lautenberg.

### STATEMENT OF FRANK R. LAUTENBERG

Senator LAUTENBERG. Thank you very much, Mr. Chairman.

Welcome, Mr. Secretary, and I begin by complimenting you on your leadership in support of HUD and its programs. From deep disproportionate budget cuts to proposals for eliminating the Department, HUD has been under fire throughout the 104th Congress.

Yet the needs for housing and community development remain enormous, and we need someone with your eloquence and your skills to lead the charge. It is easy for us in the political arena to take cheap political shots at programs that benefit people with low incomes, and no one can dispute that there are real problems with many of the housing programs, yet millions of our fellow citizens live in substandard conditions. They are forced to pay ever more of their incomes for rent or are homeless altogether.

We heard Senator Mikulski discuss the problems in Baltimore and some of the programs that have worked well. As you know, Mr. Secretary, having been to New Jersey, you have seen some of the deplorable conditions that exist there and the need that we have had most recently to tear down some of the buildings in Newark that have been failures.

The plight of these people, those who are in desperate need, ought to be a national priority. Instead, it is routinely ignored. Some may equate public housing with socialism, but there is a difference. In the old Soviet Union millions of citizens were desperate to get out. With public housing, for all of its problems, millions of Americans are desperate to get into these units.

It may sound incredible, given the deplorable conditions in some projects, but the waiting lists for these same projects are enormous. And that says a lot about the housing problem generally in our Nation.

Of course, one reason why some public housing is substandard is that it has been underfunded. Other reasons deal with the structure and with the problems of the management side of things. And Mr. Secretary, I know you've been very interested, very active in that front, and I appreciate it.

The problems, however, seem to get worse. Last year's rescission bill and the recent appropriations bill slashed $2 billion from the public housing capital budget. These cuts will only accelerate the deterioration in these facilities. And if the past is any guide, that deterioration will only contribute to calls for further cuts.

So we need to extract ourselves from this vicious cycle and, Mr. Secretary, I know you are committed to doing so with new approaches to our housing problems. You have been a good leader in promoting new scattered site housing instead of the old high rises that so often have just deteriorated into battle grounds.

You have promoted community-based nonprofit housing, which can make an enormous contribution. And you have worked hard to attack crime in subsidized housing through the drug elimination program which I sponsored several years ago, and I am pleased that it is being funded at the same level as it was last year.

In many of these efforts, Mr. Secretary, I think that you have had good support from the chairman of this subcommittee, Senator Bond, and from the ranking member, Senator Mikulski. And I want to thank them both for their genuine interest in these issues.

Although our subcommittee has operated under severe constraints, Senator Bond and Senator Mikulski have worked hard to make the best of a tough situation. I particularly appreciate their continued support of the Drug Elimination Program.

But for reasons beyond their control, there are simply insufficient resources available for housing and community development. Sadly, that is not likely to change soon.

So, Mr. Secretary, I look forward to hearing your testimony, I look forward to working with you and other members of the subcommittee to do what we can to better address the serious housing and urban problems facing our Nation.

Happy birthday. And Senator Mikulski said that you are one of the boomers and I do not know whether that means I am one of the busters. Congratulations.

Secretary CISNEROS. Thank you.

Senator BOND. Thank you very much, Senator Lautenberg.

Senator Campbell.

## STATEMENT OF BEN NIGHTHORSE CAMPBELL

Senator CAMPBELL. Thank you, Mr. Chairman. I have a conflict, so I will be leaving and I would like to submit a written statement for the record.

Senator BOND. Without objection.

Senator CAMPBELL. I would like to identify myself with the comments of Senator Lautenberg by saying welcome, Mr. Secretary, and I happen to be one who thinks you are doing a terrific job in very difficult budgetary circumstances. I just came from a hearing just about 1 hour ago in which the agency lost or misplaced or cannot find $2.4 billion, so I trust we are not giving you enough that you can just misplace it.

I know that your past performance has been really exemplary and I just wanted to compliment you on that.

Secretary CISNEROS. Thank you, Senator.

## PREPARED STATEMENT

Senator CAMPBELL. Somewhere along the line, if I am not here to ask questions, if you would maybe touch on the demonstration projects in the House bill 2406, the House version of the bill, I would appreciate it.

Secretary CISNEROS. Yes, sir.

Senator CAMPBELL. Thank you.

[The statement follows:]

### PREPARED STATEMENT OF SENATOR BEN NIGHTHORSE CAMPBELL

Thank you Mr. Chairman. I would like to make just a few brief comments on the fiscal year 1997 budget request of the Department of the Housing and Urban Development. First, I would also like to extend a welcome to Secretary Cisneros.

I must say Mr. Secretary, you have a daunting task of streamlining your agency and while also administering the many programs under your jurisdiction. While I believe you are doing your best to make progress in both the management of your agency and revamping the programs that benefit many Americans, there is still much that can be done, and much that needs to be done.

As you know, the Congress is close to approving sweeping Housing reform legislation that will revamp all housing programs, particularly those that benefit lower income people, by establishing Block Grants that will allow Public Housing Authorities to be more flexible in the administration of Federal Housing Programs. I fully support this goal and hope the administration will also endorse these initiatives.

My only question that I would bring to your attention at this time is to ask your position on the Demonstration programs, as authorized in the House passed measure H.R. 2406?

While the Senate bill is silent on demonstration programs, I have heard from my constituents that demonstration programs may be a beneficial element of the bill.

I look forward to your testimony.

Senator BOND. Thank you very much, Senator Campbell.

Mr. Secretary, if you will proceed.

## STATEMENT OF HENRY G. CISNEROS

Secretary CISNEROS. Thank you very much, Mr. Chairman, members of the committee.

Let me begin by thanking you for an extraordinarily good working relationship with this committee. Frankly, much of the work that we have tried to do over the course of the last several years would not have been possible without the understanding of the members of this committee, who have gone beyond the call of duty to write into appropriations language some of the measures that we need, the permissions that we need, to go forward and conduct the reforms that have been essential to the kind of our work.

Senator Mikulski, on her watch as chairman of this committee, Senator Bond as chairman, both have provided us with a wide latitude to work with the committee. And in an era when it is very difficult to get authorizing bills passed, the appropriators have played an absolutely essential role. I simply cannot thank you enough.

We are now in the midst, for example, of what is the most dramatic transformation in public housing since the building boom of public housing in the 1960's. The permissions that we needed to go forward to accomplish our goals, such as, ending one-for-one replacement, new preference rules for working families, changing the rent rules so working families can remain in public housing, and the permissions needed to do law enforcement all came from the work of this Appropriation Committee.

Similarly, many of our community development programs, our homeless programs, our fair housing work, and others all have felt the touch of the members of this committee.

I would also say to you that I have been listening to your comments today with an ear on my experiences in your respective States and communities. In Senator Bond's State of Missouri, I recognize the kinds of things he was talking about in Kansas City and St. Louis and in Springfield, where I have visited.

In Baltimore, last weekend, Senator Mikulski, in Prince George's County at a Homeowners Fair, at a homeless shelter in Silver Spring in Montgomery County, I recognize your commitment to these programs and the work in those places.

In Newark, where I was the weekend before last and we brought down the last units of Columbus Housing to replace them with townhouses, in Camden, where I was last Monday, where we are working on the empowerment zone that was stuck there in city-Federal-State gridlock, again I recognize your work.

In Denver and in Pueblo, places I have visited on this job; and though Senator Burns has left, I have seen his work in Billings, at the Crow Agency, at Lame Deer, the Northern Cheyenne, at the Salish-Kootenai Reservation in Pablo, MT.

So I know that you all speak from a familiarity with these programs and the way they actually touch real people's lives in your respective States.

## INTRODUCTION OF HOUSING AND URBAN DEVELOPMENT STAFF

I would like, with your permission, to quickly introduce the members of the HUD team who are here. It may seem that we have an extraordinarily expensive group of folks here because all of the top staff are here, but these are the people who run our programs. And they are not here anticipating that they would have to answer questions, but in part so that you can see the people who you can be in contact with as you try to make these programs work in your respective States.

Seated to my left is the Deputy Secretary or Chief Operating Officer of the Department, Dwight Robinson, who is doing a tremendous job bringing the size of the work force down, getting a handle on budgets, and implementing the automation of our staff. His work, along with Nic Retsinas, has made it possible for us to process FHA insurance, in what used to take 6 weeks but is now done in 2 days because of the automation and the personnel moves and the other steps that have been taken.

Seated to my right is Paul Leonard, who is the Deputy Assistant Secretary of Policy Development. He is sitting in today for Bruce Katz, who is working on an assignment related to the church burnings that are occurring throughout the South and some action that we hope to be able to take to relieve some of that problem.

Andrew Cuomo is here. He is the Assistant Secretary for Community Planning and Development. He has our homeless programs, our empowerment ones, the CDBG, and the HOME program.

Nic Retsinas, the head of FHA, is doing a tremendous job on our homeownership strategies, as well as reforming FHA, our whole real estate, private sector and market activities.

If you folks would just raise your hands as I call your name.

Kevin Marchman, who is Acting as the Assistant Secretary of Public Housing, but arguably has more on his plate right now than almost anyone in the Department because of the tremendous transformation occurring in public housing. And, as you know, we are working with the 3,400 housing authorities that are in our inventory.

Aida Alvarez, who you know as the head of the Office of Federal Housing and Enterprise Oversight Office. She is getting high marks for setting up a top professional staff and making sure that your vision for how the GSE's can not only help the housing markets function in the secondary market role, but bring some of that capital to the central cities and low-income communities. It is working. It is a model that I totally support.

Betsy Julian is the Assistant Secretary for Fair Housing. Both by profession, but also by her problem solving, mediating, conflict-resolving temperament, doing a great job in what had been kind of a heavy-handed sanctions aspect of HUD, today solving problems, mediating conflicts, trying to get ahead of problems.

Hal DeCell, our Assistant Secretary for Congressional and Intergovernmental Affairs. Hopefully, his staff is responding on a timely basis to any inquiries that your staffs may have.

Kevin Chavers is the President of GNMA. Mr. Chavers is full of good ideas about how we can strengthen the role that GNMA plays and make it more effective.

Marilynn Davis is the Assistant Secretary for Administration. As Dwight moves forward and plans to downsize and to enhance our effectiveness and productivity, it is Marilynn who carries that out.

Budgeting, personnel, automation, training, human resources—that's her bailiwick.

John Knubel is our Chief Financial Officer. He keeps an eye on merging the Department's financial systems with our performance-oriented goals.

Those are the Assistant Secretaries who are present. There is one other person I'd like to introduce you to because of his special job. That is Dr. David Jacobs, who is in charge of our Lead-Based Paint Office, and that is a critical function. Because of the amount of construction we are doing, we have to deal with lead paint issues, but also we have recently forged some new rules between HUD and EPA that deal with buyer's rights at the time that they purchase a home to know what the lead content is in there. It is a very serious problem in older areas of our country.

With that, Senator, let me proceed to a few quick charts. I will be brief as I go through them. They are designed to focus on the key areas of work. I hope that the microphone can pick this up if I stand up because I think it is easier if I handle it this way.

### DEPARTMENTAL PRIORITIES

This presentation, as I say, will be very straightforward. It deals with three priority areas for the Department because I know you want to focus on results, not just on numbers: empowering America's communities, that is our community development program; CDBG, HOME, homeless, empowerment zones; the transformation of public housing; and our homeownership affordable housing strategies.

The fourth piece of this presentation deals briefly with the work we are doing to transform the Department itself.

This is a description of our budget, very instructive, as you can see: 1995 enacted, rescission level postrescission 1995. You see that our budget has dropped by $5 billion in that timeframe. Our request for 1995 gets us back in the range of postrescission and is slightly higher than the recently House-approved subcommittee recommendation.

You can see that the levels that we have requested are slightly higher than that.

Senator BOND. I think it is fair to say, is it not, that we have heard that there will be additional funds made available on the House side in the 602(b) allocation, which can raise some of those House numbers.

Secretary CISNEROS. I cannot speak authoritatively about that, but I am advised that there will be some. So we can keep that, keep hope alive. [Laughter.]

I have heard that. [Laughter.]

You can see the effect here. You and I have talked about this a number of times. The increase in renewal and amendments and how it crowds out, in a time of scarce resources, the rate of escalation of our other program activities. So this is a very serious problem, which you are well aware of because we talked about it a number of times.

We will go to the first part of the presentation, which covers our community planning and development programs. You have been very strong, all of you, and have had bipartisan consensus about these community level programs. I must say that you have understood the plight of the cities and the mayors. CDBG has held firm in your budgets even in a time of contraction, postrescission levels.

But the House hit us very hard—by almost $500 million less. Our economic development initiatives, from our requested level, which was a doubling from last year, from our requested level, were cut dramatically.

And Youthbuild, cut in roughly one-half. Youthbuild is a very effective program for training young people in carpentry, masonry, electrical skills, and so forth.

Our homeless programs were reduced by the House back to 1996 levels from our request level—about a $300 million cut off the requested level.

Housing for persons with AIDS held strongly. Thank you for that. And our HOME program took a small cut off of what had been your pattern of holding it at those higher levels. Our homeownership zones initiative is within the funding for EDI and 108, but here you see a specific request in 1997 for our homeownership zones. I would strongly like to make the case that we have the opportunity to bring back whole neighborhoods by focusing on homeownership in large tracts. It is a magnificent thing to see across America, 200, 300 homes being built by local communities. And we are asking to handle that as, instead of having to use other programs to get there, to actually have some resources used specifically for that purpose.

## TRANSFORMATION OF PUBLIC HOUSING

The second piece of our programs is the transformation of public housing. Let me just say as I begin here, picking up on Senator Mikulski's point about the Bill Raspberry column, it repeated what we are presenting as the four strategies of public housing. First, we bring down the worst. That is what that destruction of Columbus was about, Senator Lautenberg. That is what the Vaughan demolition that Senator Bond and I participated in.

We are going to bring down 30,000 units on this 4-year stretch, which is a dramatic increase in the reduction of public housing. I think we have some charts on that that might be useful. And our goal, as the Vice President announced, is 70,000 units in the 4 years beyond that.

Now, this is not a number selected out of the blue.

This 30,000 and this 70,000 amount to 100,000. You will recall, Senator, a commission in 1991–92 on distressed public housing. That suggested then that the worst of the housing stock in America was 86,000 units. So if we were able to do this and then stabilize the rest of the housing and the new housing, we would literally have removed from the landscape of America the worst of public housing. Those 86,000 units would have been torn down and replaced, and if we could stabilize it then we have transformed public housing as it has existed in our country.

So the first step is bring down the worst. The second is to take over the housing authorities that just cannot do the job, that cannot manage. That is why we are in Chicago, that is why we are in New Orleans, that is why we are in Philadelphia, et cetera.

The third step is to try to change the dynamics for people by admissions of mixed income families, working families, by changing the rent rules so when people go to work they are not hurt, by assisting them with work opportunities, training, and so forth.

And the fourth piece of this strategy is the crime and safety environment, screening out people with drug and criminal histories and focusing on eviction. This makes the point about what we are trying to do in public housing.

## OPERATING SUBSIDY FUNDING

This is a chart that describes the money situation. You can see that the operating funds were cut slightly. This is very serious for the housing authorities because if we are trying to get fundamental change they have to have enough money to operate, and this is money that goes right to their bottom line.

Capital funding, again key because this is the money that we use for the maintenance, for the repair, and for some of the replacement. Comp rent and modernization funds, for example, are used for replacement. This is the big program, and I cannot thank you enough. I think I have to tell you that Senator Bond personally has been responsible for keeping HOPE VI alive, because it was targeted for complete elimination on the House side, and yet without this, we would be out of the ballgame.

I met this morning with the New Orleans public housing authority staff. They have about $600 million in worst case needs. It is going to take them, by one calculation, 16 years to work out the worst of the stuff that they have. However, with this program—we have already given them one almost $50 million grant for Desire. If we can run at a pace where every second or third year they could get a HOPE VI grant, then that 16 years drops to about 8, 7, or 10, a manageable timeframe to work with to get a handle on the worst.

This program is absolutely the key to our strategy for replacing. The reason we can argue for 70,000 into the future is because of HOPE VI.

## DRUG ELIMINATION GRANTS

Drug elimination grants, Senator Lautenberg is the author of this program. I have got to tell you this is the most precious money that the public housing authorities ask for. Everywhere I go in America, if they ask for one thing, it is drug elimination money. I stood in a place called Scudder Homes two weekends ago on Saturday talking to the women who live there and their families. And even though the place is beautiful and the townhouses are magnificent and the old structures are coming down nearby, there are not enough police and there is not enough crime prevention activity.

So if we did one thing beyond, if we did one thing in public housing—I mean, clearly these are all important, but if we did one thing that we could put more money into, we would never go wrong putting it in drug elimination, drug enforcement.

## SECTION 8 CONTRACT RENEWALS

This is a point that, of course, you are all familiar with, and that is the section 8. This is still in discussion in public housing. I am talking about section 8 now as opposed to hard units. We have asked for 30,000 incremental units. I know this is a sore point because of your concern about renewals and our concern about renewals. But the problem is that if we do not keep section 8 in balance——

There, this is what we create. We create a scenario where the balance between section 8 and other forms of housing assistance gets too far out of kilter. So we are doing nothing but constructing—I mean, we are constructing new hard units and our housing policy as a country moves toward, in effect, projects, project based, as opposed to tenant based. And that is the effect of cutting section 8 back too dramatically. We just end up with—we end up with an out of balance——

Senator MIKULSKI. What is the purple?

Secretary CISNEROS. The purple is hard units built through all of our programs.

Senator MIKULSKI. And what are hard units?

Secretary CISNEROS. That is apartments, hard apartments, as opposed to tenant based.

Senator MIKULSKI. But just to be clear, you are talking about public housing or are you talking about those FHA-subsidized private units?

Secretary CISNEROS. It is everything. It is public housing, HOME, and every other form of assistance that leads to construction versus tenant-based housing, tenant-based vouchers.

Senator MIKULSKI. Thank you.

Secretary CISNEROS. The argument that most housing experts make traditionally has been to keep a balance between tenant based and project based.

This, on the other hand, makes Senator Bond's point of the expiration of assisted units and how we face over the years an increase in the expiration of the older versus newer units. So we do face challenges over the years in terms of the date of expiration, and that is what drives our budget and the earlier point that I made about renewals, renewals versus the rest of our budget.

## MARK-TO-MARKET

Now we are going to the third point of the presentation, which is FHA and homeownership and the assisted housing stock. This is a description of the multifamily reengineering outlay savings, just to make a point about why it is so important we try to put in place our portfolio reengineering or mark-to-market strategy.

The demonstration that you gave us the authority to proceed with is important, but Nic Retsinas will testify, if requested, to the importance of the portfolio reengineering as a money strategy for the years to come.

Just a quick point on homeownership. You know of our homeownership rate. It is now at 65.1 percent, the highest ever achieved in the country was 65.5 percent. We believe that we are well on track. This is an accomplishment that all members can celebrate with us, because it is a joint effort.

## COMMUNITIES FIRST AGENCY

The final point of this quick presentation is to say a word about the transformation of HUD itself. We have flipped the Department on its head, with the focal point being our relationship with communities. Our service centers, our field offices, are much more closely aligned with communities. Behind that is the departmental headquarters, instead of at the top of the heap. We call this the right-side-up Department, and we serve in many communities as the entry point for the work of other Federal Departments where the Vice President has designated HUD as the single point of contact, as we are now in Connecticut and in several other jurisdictions where we are playing that role of our offices, because we have these offices, 81 field offices across the country, actually generalist problem-solvers within communities.

## SALARIES AND EXPENSES

We asked for $988 million for salaries and expenses. The House cut us to $950 million. Unfortunately, what we lost in that was $38 million of funds necessary for relocation expenses. So it is real difficult to build these field offices and reduce the role of the headquarters and get our best people out into the field if we lose the relocation funds. That is the point of that chart.

And finally, this is our recommitment to you to stay on track to reduce the full-time equivalent positions. When we arrived it was 13,500. You see we took it through 12,000 to 10,400, which is what it is now, enroute to 7,500. So we are on track toward reducing the size of the Department.

## PREPARED STATEMENT

We are getting more efficiency and more productivity even out of a smaller HUD by building these field offices, automating, creating paperless transactions to the maximum extent possible, creating collaboration among the cylinders of HUD out in the field. And this is a commitment we made to you and we are on track to live up to it.

That concludes my presentation, Senator.

[The statement follows:]

### PREPARED STATEMENT OF SENATOR HENRY G. CISNEROS

Chairman Bond, thank you for inviting me here this morning. I appreciate this opportunity you, Senator Mikulski and the members of your Subcommittee have given me to discuss the Department's fiscal year 1997 budget request and our views, in particular, of the recent fiscal year 1997 mark by the House Appropriations Subcommittee.

The past 18 months have been a watershed period for HUD, the programs we administer and the people we serve. It began with the President's ambitious proposals to overhaul and remake federal housing policy—amid calls for elimination of the Department. It ultimately has led to some remarkable examples of bipartisan collaboration—in appropriations as well as authorization legislation—to produce far-reaching, progressive reforms to our existing programs.

These legislative actions are having an enormous impact on the way HUD and its myriad partners conduct the peoples' business. Nowhere is change more evident, more tangible than in public housing. The elimination or relaxation of restrictive rules and the provision of flexible resources has already allowed the demolition of some of the worst housing in America—and the emergence of a new form of public housing that is smaller-scale, economically integrated and an anchor for neighborhood renewal. Travel to St. Louis, Philadelphia, Baltimore, Atlanta, Hartford, Dallas, Newark and many other American cities and you will witness the changing of the urban landscape in ways that will benefit communities and families for decades to come.

You and Senator Mikulski deserve an enormous amount of credit for the change in public housing. You have been steadfast supporters of key programs like HOPE VI as well as persistent advocates for reform in the laws governing public housing. I commend you both for your profound contributions in this area.

What I would like now to present is an overview of HUD's fiscal year 1997 budget with particular emphasis on two areas: first, how the budget furthers the Department's reinvention agenda and second, how the budget has fared to date in the House appropriations process.

## IN GENERAL

HUD's fiscal year 1997 budget request calls for $21.7 billion in budget authority to cover HUD's various programs and activities, including contract renewals and amendments. When renewals, amendments, and offsetting receipts are backed out, HUD's budget calls for $17.2 billion to fund programs like HOME, CDBG, Section 8, public housing and homeless.

The House recommended funding levels represents a dramatic reduction from these requests. Overall, the House bill would appropriate $19.8 billion for all of HUD's activities, a reduction of about $1.9 billion from our request.

The difference is even starker once we back out contract renewals and amendments—which are demand-driven and must be funded. Funding for all remaining HUD programs amounts to only $14.8 billion—which is $2.4 billion below the Administration's request and $1.9 billion below last year's appropriated levels.

The impact of this reduction is felt throughout HUD's programs. CDBG is cut over $450 million from last year's level, the distressed public housing effort is set back $170 million and for the third year in a row there is no incremental rental assistance. And all HUD programs sustain a 1.3 percent cut to meet the harsh outlay targets set by the House.

The Administration feels strongly that these are cuts which do not need to occur. The House has set overly tight budget authority and outlay targets for their VA/HUD subcommittee—as part of a larger effort to shift funding from domestic programs to defense.

Let me illustrate the impact of the House reductions by walking through the major components of HUD's fiscal year 1997 budget request.

### *Empowering America's Communities*

For the past several years, HUD has sought to enhance the ability of local communities to respond to their desparate housing and development needs. In specific, we have sought to transform HUD from an agency overseeing literally dozens of specialized, "boutique" programs—all with their own distinct rules and regulations—to one administering formula-driven funds that will enable the development of locally created strategies that respond to local needs. In pursuing this consolidation agenda, we have also sought to convert existing block grant programs to performance funds that emphasize accountability and reward excellence.

HUD's fiscal year 1997 budget for CDBG, HOME and homeless programs reflects this larger agenda. Let me discuss each major program in turn—as well as the initial House response.

HUD fiscal year 1997 budget requests $4.6 billion for the core CDBG program, the same level included in the fiscal year 1996 appropriation law. Yet we also seek an additional $200 million to support a second round of empowerment zones and an additional $100 million to support a bonus pool of funding. The bonus funds would be made available on a competitive basis to jurisdictions that meet their own performance goals as well as minimum program requirements. Bonus funds would be used to finance efforts that either generate economic revitalization in distressed communities or link people living in distressed communities to jobs.

The House bill reduces the core CDBG program to $4.14 billion, a $450 million reduction below the fiscal year 1996 appropriations law. This cut obviously raises serious problems for the states and cities who administer CDBG. Because CDBG is so flexible, communities are likely to see the impact in a variety of areas—in housing not rehabilitated, in economic development not funded, in public services not provided. As a former Mayor, I can tell you that these funds are highly competitive at the local level and support important activities that localities and States simply cannot afford with their own resources.

The House bill also fails to fund the requested bonus pool. It does, however, continue some funding—$40 million—for the Administration's Economic Development Initiative, a $10 million reduction from current funding levels. We appreciate the House's support for this key, targeted investment program. We note, however, that the Administration's request would have leveraged more than $800 million in Section 108 loan guarantees and an additional $2 billion in private and public sector investment and would have helped create or retain some 40,000 jobs; the House mark would permit only about 30 percent of such needed activity to occur. We clearly hope that the Senate can expand funding for one of the few federal programs geared to generating jobs in distressed communities through public and private sector commitments.

HUD's fiscal year 1997 budget also requests $1.4 billion for the core HOME program, again the same level included in the fiscal year 1996 appropriation law. Yet we will also seek an additional $135 million to support a bonus pool of funding. As with CDBG, only good performers would be allowed to compete for these funds—which would be targeted to the development of large tract homeownership communities.

It is my belief that, in many cities, the creation of so-called "homeownership zones" offers our best hope to reclaim abandoned neighborhoods and stimulate business creation and private investment. Over 50 cities are currently trying to create such communities by marrying CDBG, HOME and other federal funds with other public and private sector resources. The establishment of a federal initiative targeted to this purpose will greatly enhance and facilitate these local efforts.

The House bill again falls short of our objectives. The bill funds HOME at close to $1.4 billion. The House recognizes that HOME has quickly become an invaluable tool in the efforts of states and localities to address their affordable housing problems. Yet the House bill does not fund the requested bonus pool nor provide any other mechanism by which a targeted "homeownership zones" effort can be undertaken.

As in previous years, I again ask this Subcommittee to consider the wisdom and efficacy of establishing an initiative designed to boost homeownership in our distressed communities. I truly believe that this initiative can help spur a new approach to neighborhood renewal that can be sustained for the long haul.

Finally, HUD's fiscal year 1997 budget requested $1.12 billion for a consolidated Homeless Fund, the same level appropriated in fiscal year 1995. We would make 10 percent of this fund—$110 million—available on a competitive basis to good performers to fund innovative homeless strategies, including those that address homeless persons with multiple diagnoses.

The House bill provides $812 million for the existing homeless assistance grants program, a $308 million reduction from the overall Administration's request. This reduction will dramatically affect the number of homeless persons that can be served with HUD funding. HUD estimates that some 485,000 homeless people were touched in some significant way by projects awarded with fiscal year 1995 funds. A 28 percent drop in funding below our request would reduce the number of homeless persons receiving assistance to approximately 385,000, a 100,000 reduction.

The demand for additional homeless funds is still substantial. We note that even with the fiscal year 1995 appropriations of $1.12 billion, nearly $1.5 billion in homeless project applications went unfunded. These are resources well worth providing; states and cities across the country are using these homeless funds to support comprehensive, strategic plans that offer the best hope for addressing homelessness in the past decade and a half.

### *Transforming Public and Assisted Housing*

I have already referenced the collaborative efforts by Congress and the Administration to remake the image and reality of public housing. This Subcommittee has played a leadership role in this effort. The fiscal year 1996 appropriations law adopted many of the interim steps that HUD recommended, including:

- —repeal of the one-for-one replacement rule which required public housing authorities to replace every unit they tear down with a new housing unit;
- —repeal of the preference rules, which led to the substantial concentration of the very poor in public and assisted housing;
- —critical reforms to the existing rent rules to encourage working families to remain in good public housing and help dependent families to make the transition to employment and self-sufficiency;

—substantial reforms to the public housing capital program to permit the demolition and replacement of older stock and allow innovative partnerships with private sector developers and lenders; and

—mandatory conversion of much of the most expensive and dilapidated stock to voucher assistance.

I firmly believe that our collective work will enable communities to achieve three critical goals: replace the most dilapidated, distressed developments with vouchers or smaller-scale affordable housing, provide incentives to tenants to become self-sufficient by rewarding work and connecting isolated residents to educational and employment opportunities and place conditions on public housing residency through tougher occupancy and eviction rules.

But I fear that we have the potential in public housing to get the policy right and the budget wrong. As we have often discussed, I believe public housing received more than its fair share of the cuts in the fiscal year 1995 rescissions law and the fiscal year 1996 appropriations law. This is ironic—we are cutting funds at the same time that we have finally figured out how to build and manage and operate public housing in a way that strengthens rather than undermines neighborhood renewal.

HUD's fiscal year 1997 budget would seek further restoration of public housing funding—an additional $100 million in operating funding, an additional $500 million in capital funding and an additional $170 million in funding for distressed public housing. The extra capital funds would be used to reward only those PHA's that are deemed to be superior performers—that is, they score over 90 on the current measurement system. I cannot think of a better way to send a signal through the public housing system that performance counts and that excellence pays.

The House mark falls far short of our budget request. The mark would reduce the fiscal year 1996 appropriations for the major public housing programs—operating subsidies, capital funds, the distressed public housing program and drug elimination grants—by 1.3 percent.

Such reductions actually mask additional cuts. In the case of the distressed public housing program, for example, the House mark would no longer fund separate rental certificates—used to accelerate the demolition of dilapidated projects by relocating existing families. The fiscal year 1996 appropriations law provided separate funding for close to 20,000 such certificates—at a one-year BA cost of $170 million. The HOPE VI program would now bear the burden of funding these certificates—and the level of support for revitalization and replacement efforts would hence be reduced. Such cuts are unacceptable at a time when our efforts to tear down the worst public housing stock are finally moving forward after years of gridlock and delay.

We also have much work to do on the assisted housing side. Here too, recent House action holds both promise and peril.

The uncertain future of incremental rental assistance is the area of largest concern. As you know, HUD's fiscal year 1997 budget requests funding for some 30,000 housing certificates to be used principally as part of a larger welfare-to-work initiative. The Administration strongly believes that tenant-based Section 8 rental assistance remains our strongest tool to address the housing problems faced by millions of low-income American families. Those housing problems are for the most part affordability driven—low income renters are simply paying too much of their income for housing that is generally decent. In fact, 4.2 million low-income families pay more than 50 percent of their income for rent and have no other serious housing problem. By relying on income supports rather than capital subsidies, Section 8 provides an efficient and expeditious response to these affordability problems.

Yet the past two appropriations laws have virtually eliminated all funding for incremental rental assistance—principally in response to larger budgetary pressures than any dissatisfaction with the voucher program. The House bill continues this trend and also contains no funding for incremental Section 8 rental assistance.

I believe this policy needs to be revisited. Our analysis shows that vouchers as a proportion of all incremental subsidized units have declined precipitously—from 42 percent of the total in 1986 to less than 1 percent this fiscal year. What is emerging is a federal housing policy that relies almost exclusively on supply oriented housing programs rather than one that relies on a mix of supply and demand subsidies. I believe this new housing policy is neither balanced nor tailored to the types of housing problems faced by low-income renters today.

The House bill holds more promise for other components of HUD's assisted housing agenda, most notably our portfolio reengineering initiative. Our fiscal year 1997 budget again attempts to address long-standing problems in the FHA portfolio of some 8,500 projects that have mortgage insurance and also receive project-based rental subsidies. The excessive costs of this inventory are well documented. Many of these properties are over leveraged and the Federal government is paying excessive subsidies to prevent mortgages from going into default.

Last year we proposed a comprehensive strategy to mark-to-market the debt on HUD's older subsidized inventory—which would have produced savings, enhanced housing quality, and allowed formerly subsidized properties to compete in the marketplace for renters holding portable certificates. Congress responded by authorizing a significant demonstration to test many of the precepts of this initiative. That demonstration is now being implemented and your staff is being apprised as we move forward.

After lengthy consultations with affected constituencies, we have agreed to revise our "mark-to-market" proposal in several ways. We have agreed, for example, to protect existing tenants by involving localities in deciding whether rental subsidies should be tenant-based or project-based. We have also agreed to focus our restructuring efforts in fiscal year 1997 primarily upon projects whose contracts expire and whose current rents are above market levels.

The House appropriations bill goes a long way towards incorporating the Administration approach. It requires restructuring for all contracts expiring in fiscal year 1997 with rents above market. I want to particularly commend Chairman Lewis for spending substantial personal time and political capital on this critical issue.

The Senate authorizing committee—by virtue of a staff discussion paper on portfolio reengineering—appears headed in the same direction. We agree with a number of elements in the approach to this pressing problem laid out in the staff paper, including the need to reduce over-subsidized rents, the need to protect existing low-income residents from involuntary displacement, the importance of retaining responsible owners and honoring contracts with such owners, and the need to recapitalize projects with deferred maintenance. We welcome the opportunity to discuss further several areas where we have concerns. In particular, we are concerned that the Senate authorizers' approach would achieve smaller FHA claims savings and relies on a formula-rent process that HUD could not easily administer.

The importance of these actions cannot be overstated. If we start now on this restructuring effort, we can generate over $1.8 billion in discretionary outlay savings over the next 7 years and another $1.4 billion in mandatory savings from reduced default costs. As we move towards a balanced budget, these savings will be absolutely essential for HUD to continue to provide flexible resources to communities.

Finally, the House bill holds more promise on the issue of expiring 8 contracts. As the attached paper shows, the numbers of expiring Section 8 contracts—for vouchers as well as project-based assistance—grows precipitously over the next five years. In fiscal year 1997, contracts covering 833,500 units will expire. That number increases to over 2.7 million by fiscal year 2002.

To date, HUD and the Congress have worked together to ensure that every expiring contract is renewed. We all have understood that failure to renew these contracts will reduce the number of families HUD assists and could compel currently assisted residents to face sharp rent increases, forced displacement or eviction.

HUD's renewal needs in fiscal year 1997 should not pose a significant problem: the budget request of $4.26 billion is only slightly higher than the appropriations provided in fiscal year 1996. The House bill's funding level of $5.2 billion will more than accommodate the need in fiscal year 1997. Yet in fiscal year 1998 and beyond, the budget authority needed to renew these contracts will rise sharply.

The Administration has provided HUD with sufficient budget authority in the outyears to accommodate these increases. We have done so recognizing that contract renewals will have a relatively small impact on actual expenditures in the Department. That makes sense. A renewed rental voucher will cost the Federal government the same on October 1st as it did on September 30th.

*Fiscal year 1997 budget themes*

Empowering America's communities
Transforming public and assisted housing
Enhancing homeownership opportunities
Creating a "Community-First" Department

## DISCRETIONARY BUDGET AUTHORITY

[In billions of dollars]

| | Fiscal year | | | | |
|---|---|---|---|---|---|
| | 1995 enacted | 1995 post-rescission | 1996 enacted | 1997 House substitute | 1997 request |
| New program activity | 21.6 | 17.7 | 16.7 | 14.8 | 17.2 |
| Renewals and amendments | 4.1 | 2.9 | 4.6 | 5.9 | 5.1 |
| Department total, including offsetting receipts | 25.3 | 20.1 | 19.5 | 19.8 | 21.7 |

## COMMUNITY PLANNING AND DEVELOPMENT—BUDGET AUTHORITY

[In million of dollars]

| | Fiscal year | | | Difference |
|---|---|---|---|---|
| | 1996 | 1997 request | 1997 House substitute | |
| CDBG | 4,600 | 4,600 | 4,145 | −455 |
| Economic development initiative | 50 | 100 | 40 | −60 |
| Youthbuild | 20 | 40 | 20 | −20 |

## COMMUNITY PLANNING AND DEVELOPMENT—BUDGET AUTHORITY

[In millions of dollars]

| | Fiscal year | | | Difference |
|---|---|---|---|---|
| | 1996 | 1997 request | 1997 House substitute | |
| Homeless | 823 | 1,120 | 812 | −308 |
| HOPWA | 171 | 171 | 169 | −2 |
| HOME | 1,400 | 1,400 | 1,382 | −18 |
| Homeownership zones | | 135 | | −135 |

## TRANSFORMING PUBLIC HOUSING—BUDGET AUTHORITY

[In millions of dollars]

| | Fiscal year | | | Difference |
|---|---|---|---|---|
| | 1996 | 1997 request | 1997 House substitute | |
| Operating funding | 2,800 | 2,900 | 2,763 | −137 |
| Capital funding | 2,500 | 2,500 | 2,383 | −117 |
| HOPE VI/VII and replacement | 640 | 650 | 474 | −176 |
| Drug elimination grants | 290 | 290 | 286 | −4 |

### *Vouchers Declining as a Proportion of Rental Housing Assistance*

| | *Percentage* |
|---|---|
| 1986 | 42 |
| 1987 | 28 |
| 1988 | 23 |
| 1989 | 24 |
| 1990 | 26 |
| 1991 | 19 |
| 1992 | 19 |
| 1993 | 17 |
| 1994 | 16 |
| 1995 | 12 |
| 1996 | 1 |

### EXPIRATIONS OF ASSISTED UNITS SUBJECT TO MPR INITIATIVES

[Thousands of units]

| Fiscal year | New | Older |
|---|---|---|
| 1997[1] | 14.6 | 222 |
| 1998 | 30.1 | 109.4 |
| 1999 | 44.9 | 60.5 |
| 2000 | 54.7 | 22.2 |
| 2001 | 64.9 | 3.7 |
| 2002 | 44.6 | .5 |
| 2003 | 54 | 6.3 |
| Thereafter | 48 | 9.1 |

[1] 1997 includes 112,000 units that expire in 1996 (1,000 newer; 111,000 older).

### *Multifamily Portfolio Reengineering Outlay Savings*

| *Fiscal year* | *Millions* |
|---|---|
| 1997 | $170 |
| 1998 | 59 |
| 1999 | 300 |
| 2000 | 517 |
| 2001 | 335 |
| 2002 | 412 |
| Total discretionary savings | 1.8 |

### DEPARTMENTAL FUNDING—BUDGET AUTHORITY

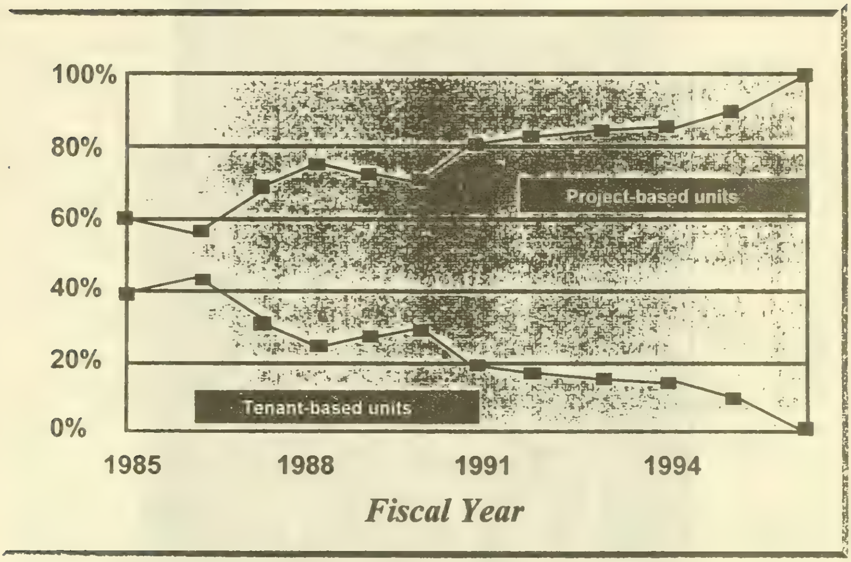
[In millions of dollars]

| | Fiscal year | | | Difference |
|---|---|---|---|---|
| | 1996 | 1997 request | 1997 House substitute | |
| Total salaries and expenses | 962 | 988 | 950 | −38 |

*Bringing Down the Nation's Worst Public Housing and Replacing It With Quality Affordable Homes*

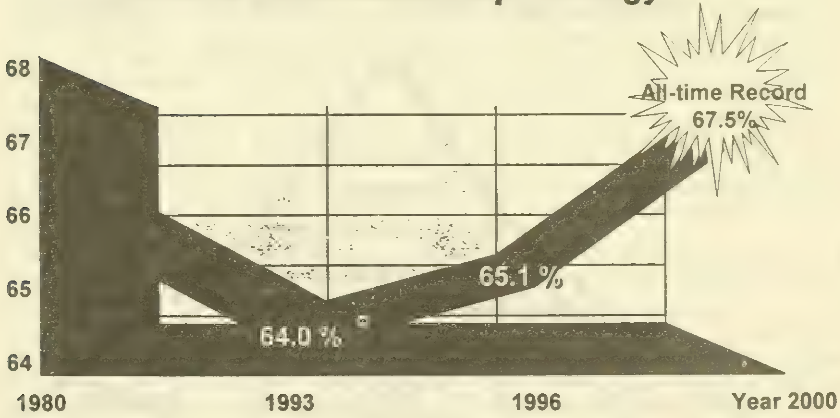
| *Fiscal year* | *Cost* |
|---|---|
| 1981–84 | 3,300 |
| 1985–88 | 11,000 |
| 1989–1992 | 6,400 |
| 1993–96 | 30,000 |
| 1999–2000 projected | 70,000 |

## Trends in Rental Assistance

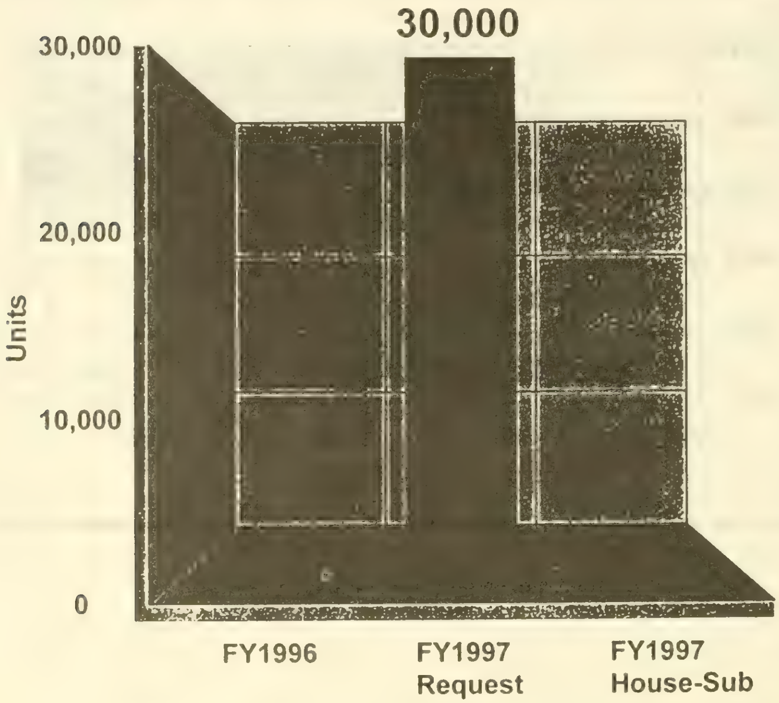


## Enhancing Homeownership Opportunities

### *National Homeownership Strategy*

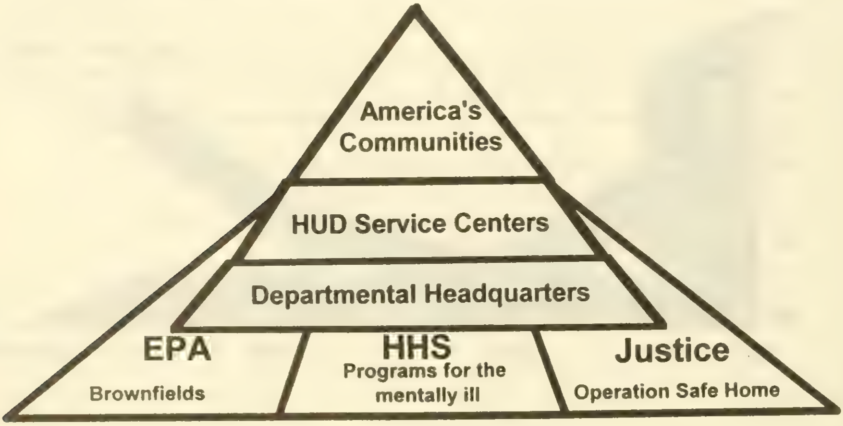


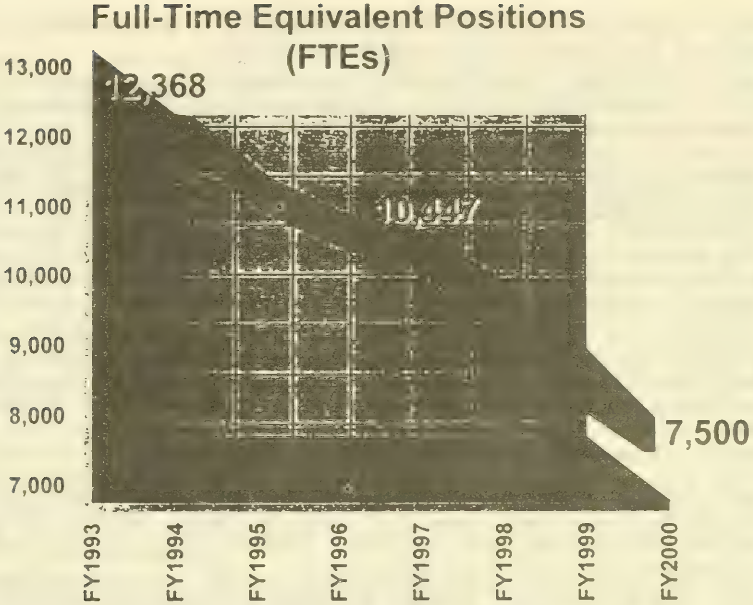
## Assisting Families Through New Section 8



## Transformation of HUD Itself

*"Creating A Right-Side Up, Community-First Agency"*





*** Totals do not include Inspector General, Working Capital fund, & OFHEO**

Many in Congress and elsewhere have failed to understand this unique aspect of HUD's Section 8 challenge. The attached paper will clarify the real budgetary issues that are raised by contract renewals.

*Ensuring the Opportunity of Homeownership for All Americans*

A year ago, HUD proposed a fundamental reform of the FHA as a way to enhance homeownership opportunities for Americans locked out of the conventional market. Since then we have significantly raised our sights. Responding to a challenge from President Clinton, we have forged a coalition of over 50 public and private entities in the homeownership industry. This coalition, the National Partners in Homeownership, has the goal of helping the nation achieve a record level of homeownership by the end of the year 2000.

The Partners have developed a strategy to help achieve this goal by wherever possible: reducing the cash needed to buy a home by lowering mortgage closing costs and downpayment requirements; making it simpler to finance the purchase and the repair of a home; and opening up markets for women and minorities and central city homebuyers and others traditionally locked out of the conventional lending markets.

Last week we held a Homeownership Summit to celebrate the positive achievements of this year-long partnership. In 1995, the national homeownership rate increased by 0.9 percent, the largest annual increase in 30 years. The current rate of 65.1 percent is the highest in 15 years. Clearly, the collective and individual efforts of scores of national and local partners are making a difference in the lives of homebuyers across the country.

HUD's principal contributions are two-fold. First, we are playing the key role of catalyst and convener in this national effort: forging partnerships between the public and private sectors to further homeownership goals.

Second, we are transforming FHA into a new type of insurance entity—one that is more entrepreneurial, more nimble, and more responsive to our customers. In the past two years, FHA has worked to consolidate its functions, enhance its technology and streamline its activities. In some parts of the country, the processing of single family mortgage insurance has been reduced from 7 weeks to under 2 days.

In addition, FHA has worked over the past two years to lower closing costs, particularly for first-time homebuyers. In 1994, FHA cut its mortgage insurance premiums by 25 percent or $600 per average borrower. Last week, FHA announced its intention to lower mortgage premiums by another 25 basis points—from 2.25 percent to 2 percent—for first time homebuyers engaged in homeownership education programs. That's another $200 in savings per customer.

These initiatives are absolutely consistent with our larger efforts to maintain the safety and soundness of the FHA Fund. Last Friday, I announced the latest independent audit of FHA—which shows that we are meeting the Congressionally mandated targets on capital ratios four years ahead of schedule.

Some FHA changes, however, cannot be made administratively. That's why we are sending Congress legislation this week to help us streamline FHA's overly complex downpayment calculations and authorize greater product flexibility. We hope you can be helpful in these efforts.

Unfortunately, our key fight this year will be to preserve FHA. As you know, there are some who continue to fundamentally question FHA's role. They want us to either privatize FHA or strictly target FHA's business. This would be a terrible mistake. It would undo 60 years of virtually unimpeded progress in homeownership for average working families in America.

Private groups estimate that if FHA were eliminated, the national homeownership rate would decline to 64 percent by the year 2000, instead of rising as we believe it can, and must. It would have a particularly negative impact on first-time homebuyers, minority homebuyers and others who are locked out of the conventional market.

### *Creating a Community-First Cabinet Agency*

The dramatic and exciting program reforms that I have described can only be fully implemented if HUD itself changes. Some of that transformation has already occurred. In the past three years, HUD already has become a leaner, more focused operation—administering fewer and fewer programs and downsizing from 13,600 employees in January, 1993 to 10,800 currently.

We now propose to go further, advocating the creation of a "right-side-up" cabinet department that is organized, staffed and empowered to respond to locally driven priorities rather than federal dictates.

HUD proposes a new structure that literally inverts the organizational chart, putting the federal representatives who meet the public on the highest level and arraying every other function in support of the front-line staff.

—To this end, headquarters staff will be relocated to field offices and local staff will be given maximum flexibility and authority to work with communities to address their needs and problems.

—HUD staff will receive intensive training to help them meet the need for community-oriented experts who help communities optimize the necessary layering of local, state, federal and private resources.

—And, with fewer overall staff, the agency will more heavily rely on the latest computer technology to communicate with partners, enhance local strategic planning, expedite loan and grant processing and monitor recipients and lenders.

In the long-term, these changes will save the American taxpayer substantial resources. Yet major organizational change often costs more in the short term. Thus, our fiscal year 1997 budget requests an increase of $25 million in our salaries and expenses account to fund such critical areas as training, relocation, and technology needs.

HUD is in the process of completing 1,250 buyouts, begun in fiscal year 1995. The Administration is currently seeking additional agency buyout authority to facilitate these reductions in staff. The Department supports the Administration's bill.

The House bill is disappointing in this area. Its support for "S and E" at a $950 million level entails a $38 million reduction from our request and a $13 million reduction from this year's appropriations.

## CONCLUSION

In conclusion, the past 18 months have witnessed fundamental change at the Department of Housing and Urban Development. On every front—community development, homelessness, public housing, assisted housing, homeownership—we are taking important steps toward overhauling antiquated laws and building a new HUD that is customer-oriented, performance-driven, and more responsive to local needs.

The key issue before this Subcommittee is whether the fiscal year 1997 budget will enhance or retard the substantial progress that has been made in the past few years. I have strong concerns about the direction of the House bill: deeper cuts made in core Departmental programs.

Now, Mr. Chairman, I'll be happy to answer any questions you and the Committee members may have and discuss with you the successes and challenges in fulfilling the mission of the U.S. Department of Housing and Urban Development.

## SECTION 8 CONTRACT RENEWALS

### OVERVIEW

HUD currently provides rental assistance to nearly three million units of rental housing through its Section 8 tenant-based and project-based programs. In fiscal year 1997, contracts covering 833,500 units will expire. The number of contracts expiring grows sharply over the next five years.

To date, HUD and the Congress have worked together to ensure that every expiring contract is renewed, under a bi-partisan commitment to maintain the number of elderly, disabled, families with children and other very low income households who currently receive HUD housing assistance. This assistance is the most fundamental program for ameliorating the nation's large and growing low income housing problems. HUD recently reported that the number of very low income households paying more than half their income for rent or living in severely substandard housing reached an all-time high: 5.3 million households in 1993.

If all contracts are renewed, HUD will continue to assist nearly 3 million households each year. Failure to renew expiring contracts will reduce the number of households HUD assists and could force currently-assisted tenants to face sharp rent increases, forced displacement or eviction. Eligible families would face even longer spells on waiting lists, which typically last several years currently. Moreover, HUD failure to renew project based contracts would sharply reduce project revenues and result in higher rates of default and FHA claims.

Providing sufficient budgetary resources to continue to renew all contracts will be a significant challenge at the same time the budget is being balanced. HUD is expected to come under intense pressure to reduce its spending (or "outlays") to meet the goal of a balanced budget.

It should be understood, however, that renewing expiring contracts will require a sharp increase in budget authority over the next few years. Without policy changes, Section 8 outlays would also rise sharply, but not nearly as dramatically as the growth in budget authority. HUD's fiscal year 1997 budget provides all the necessary budget authority and outlays to renew all expiring contracts through fiscal year 2002. Moreover, HUD's fiscal year 1997 budget includes a number of policy changes that would sharply reduce the projected growth in Section 8 spending. These reductions account for more than half of the $13.5 billion in outlay savings over seven years in HUD's budget.

The following discussion provides greater detail on the expiring Section 8 contracts issue.

### HUD FACES SHARP INCREASE IN SECTION 8 CONTRACT EXPIRATIONS

HUD's fiscal year 1997 budget would renew contracts covering 833,501 units. The number of units with contracts expiring grows sharply over the next few years. Figure 1 shows the number of units with expiring contracts. The sharp growth in expirations results from two sources. First, there is a sharp rise in the number of long-term contracts expiring for the first time in the coming years. These consist of 15- and 20-year contracts issued in the late 1970's and early 1980's, particularly in the New Construction/Substantial Rehabilitation program, and five-year tenant-based contracts issued in the early 1990's.

In addition, HUD must "re-renew" an increasing number of contracts that have been renewed at least one time previously. The number of units being re-renewed increases sharply as contract terms have grown shorter. In the early 1990's, most expiring contracts were renewed for five-year terms, but terms have been gradually shortened since then. For example, the fiscal year 1997 budget includes the annual renewal of the 235,000 units of project-based Section 8, which are being renewed for one year terms in fiscal year 1996.

For fiscal year 1997, HUD proposes to renew all contracts for one year. One-year terms dramatically accelerate the cascading of contract expirations. With one-year terms, HUD will be renewing more than three-quarters of all Section 8 units each year by fiscal year 2000. Additional implications of one-year terms are discussed in more detail below.

FIGURE 1.—*Section 8 Renewals Assuming One-Year Terms*

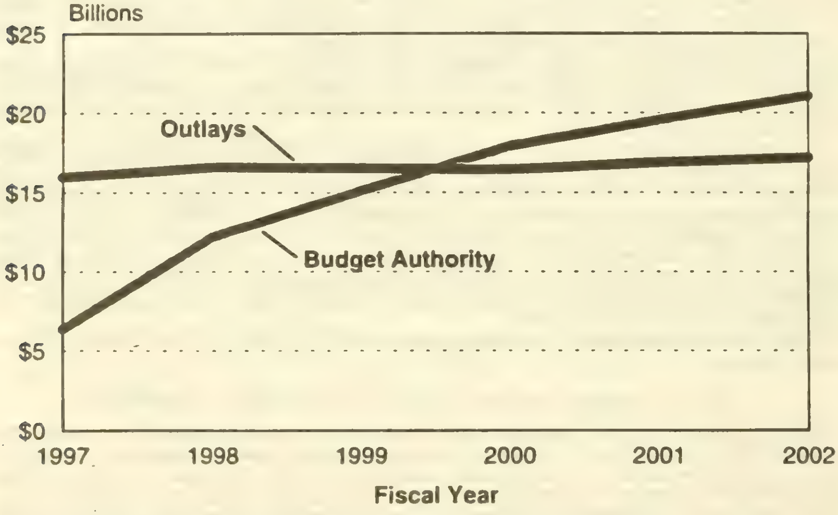
| *Fiscal year* | *Thousands* |
|---|---|
| 1997 | 834 |
| 1998 | 1,865 |
| 1999 | 2,184 |
| 2000 | 2,492 |

| *Fiscal year* | *Thousands* |
|---|---|
| 2001 | 2,613 |
| 2002 | 2,732 |

BUDGET REQUIREMENTS FOR RENEWING EXPIRING CONTRACTS

Renewing expiring contracts will require a sharp increase in budget authority over the next several years. This increase, however, has little effect on projected outlays for Section 8. With portfolio re-engineering and other program reforms, Section 8 outlays will grow more slowly than the overall rate of inflation. Figure 2 shows the projected needs for budget authority and outlays under HUD's fiscal year 1997 budget. It should be noted that in the figure and in the text hereafter unless otherwise indicated, budget figures refer to total Section resources, including funds for contract renewals, amendments, and the modest amount of incremental assistance the Administration has proposed.

FIGURE 2.—*Section 8 Budget Authority and Outlays—HUD Budget, fiscal year 1997–2002*

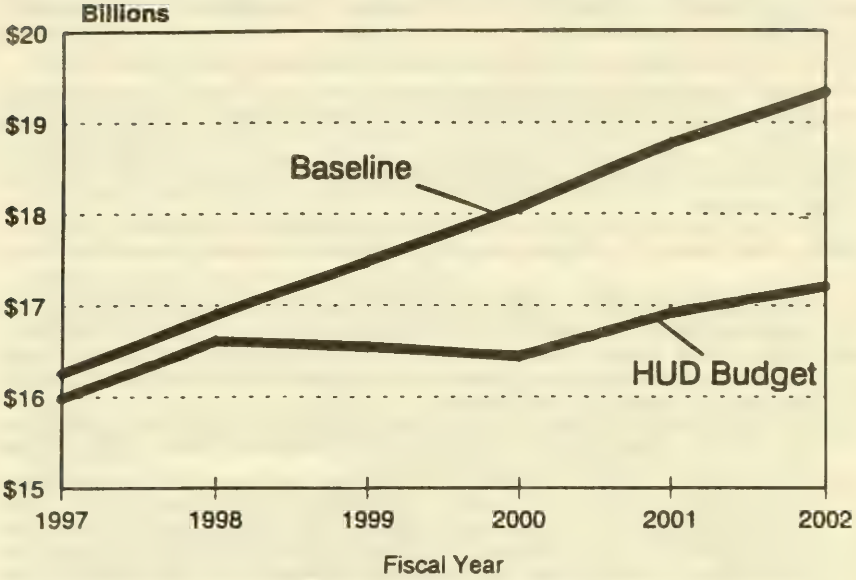


Includes all Section 8 spending, not contract renewals exclusively.

The need for additional budget authority for contract renewals is substantial over the next decade. In fiscal year 1997, HUD requests $4.3 billion for contract renewals; by fiscal year 2002 HUD would need $19 billion for contract renewals. Total budget authority for Section 8 programs rises from $5.8 billion to $20.5 billion over the same period.

Section 8 outlays are rising, but not nearly as sharply as budget authority. Under current policies ("baseline"), Section 8 outlays would rise from $16.3 billion in fiscal year 1997 to $19.3 billion in fiscal year 2002. Figure 3 shows Section 8 outlays under current policy and under HUD's proposed budget.

FIGURE 3.—*Section 8 Outlays Baseline vs. HUD Budget*



**Includes all Section 8 outlays, not contract renewal outlays exclusively.**

With a number of policy reforms, HUD proposes to contain the growth in Section 8 outlays. Under HUD's budget, Section 8 outlays would be held to $17.1 billion by fiscal year 2002—just $1.2 above fiscal year 1997 levels. By fiscal year 2002, these policy reforms produce $2.1 billion in savings, compared to current policy assumptions. These savings measures include:

| | *Billions* |
|---|---|
| Elimination of Preservation Program | $2.2 |
| Subsidy reductions associated with multifamily portfolio re-engineering | 1.8 |
| Reform of property disposition | 1.1 |
| Reduce fair market rents to 40th percentile | 1.0 |
| Reduce Public Housing Authority administrative fees | 0.6 |
| Serve more low-wage working families | 0.4 |
| Total | 7.1 |

Taken together, these reforms substantially slow the growth in Section 8 outlays. In fact, the per unit cost of subsidizing Section 8 units increase by only 1 percent per year, or less than the overall rate of inflation.

The bottom line is that between fiscal year 1997 and fiscal year 2002, budget authority for Section 8 contract renewals rises by $15 billion, but overall Section 8 outlays increase by a little over $1 billion. Without the aggressive efforts to reform Section 8 programs which HUD has proposed, outlays would increase by an additional $7 billion over the same period.

ONE-YEAR CONTRACT TERMS IMPROVE BUDGETING FOR CONTRACT RENEWALS

HUD proposes to renew all Section 8 contracts for one-year. Budget experts agree that this is the most prudent way to manage these contracts.

—As long as contracts are renewed each year, one-year terms will have no impact on program participants. Tenants and landlords generally operate on one-year leases and have no knowledge of the contract terms between HUD and the PHA.

—Moving to annual renewal of contracts will improve the ability of policymakers—Congress, the Administration, and the Department—to manage the contract renewal process by having more precise budget estimates and more timely information.

- —One year renewals will place HUD programs on the same budget basis as virtually all other domestic discretionary programs. Since all units will require annual renewals, appropriators will have much more control over HUD program levels.

### ENSURING SUFFICIENT RESOURCES FOR CONTRACT RENEWALS

The large increase in budget authority needed to renew expiring Section 8 contracts has mistakenly led many to believe that Congress could not afford to balance the budget and renew all contracts. As shown above, the amount of budget authority needed for renewals bears little relationship to the outlays associated with those units. Moreover, HUD has proposed prudent reforms to control the real growth in Section 8 outlays.

However, renewing all contracts in the current budget environment is not assured. Four things must happen to ensure sufficient resources for renewing all contracts.

- —Budget authority and outlays associated with contract renewals must be included in OMB and CBO budget baselines. Congress included special measures in the Budget Enforcement Act to ensure that the unique nature of contract renewals would be adequately reflected in the official budget "baselines"—the starting point for all budget negotiations. OMB and CBO both currently include funding for renewals in their baselines.
- —The Congressional Budget Resolution must assume renewals occur each year. The budget resolution must reflect the overall amount of budget authority and outlays needed for contract renewals each year.
- —Appropriators must provide sufficient resources to renew all contracts. Each year's budget resolution provides appropriations committees with a total amount of discretionary spending authority. The appropriations committees must allocate those discretionary resources between the 13 appropriations subcommittees. In future years, as the amounts of budget authority needed for contract renewals grows sharply, these resources for contract renewals will be a tempting target for allocation to other purposes. With contract terms at the bare minimum of one year, any shifting of contract renewal resources to other discretionary programs would likely result in non-renewal of some units.
- —Ultimately, the overall discretionary caps limiting budget authority must be adjusted to reflect the budget authority needs of contract renewals. The discretionary caps governing the total amount of budget authority and outlays available each year through fiscal year 1998 were set to allow for all contracts to be renewed. These caps were enacted in 1993, however, when the standard contract renewal term was four years. Reduced terms have dramatically shifted the timing of contract renewals. HUD has also refined its estimates of the amount of budget authority needed for renewals since 1993.

Whenever the discretionary caps are extended for years after 1998, budget policymakers should be mindful of the need to allow for sufficient budget authority to renew all contracts.

### ENACTMENT OF PUBLIC HOUSING REFORMS

Senator BOND. Thank you very much, Mr. Secretary.

I note that Senator Mikulski mentioned the one strike and you are out, a measure that we included in S. 1494, a bill signed in March. We are very pleased that being implemented.

We appreciate your kind comments about authorizing on appropriations bills. It is not every group that shares the same enthusiasm for that. It was a little secret and I ask everybody in the room not to mention it outside of here, if you would, please, because we do know that there are some things that are vitally important and we have to get enacted.

I want to stay on that for a moment because we have included legislative reforms—resident rent reforms, the mandatory minimum rent, waiver of inflexible Federal resident selection criteria, waiver of the take one, take all, endless lease rules, waiver of the one-for-one replacement required for failed public and assisted housing.

Both for fiscal year 1995 and again for the current year, these reforms were temporary so we would not be preempting action by the housing authorizing committees. It means, however, that these reforms expire in 4 months and the old rules will be reimposed. Fortunately, the housing authorization bill has passed the House and hopefully will be conferenced and enacted into law during this session. I am very supportive of the legislation and I hope it becomes law.

But do you share my concern over the need to enact permanent legislative reforms for public and assisted housing?

Secretary CISNEROS. Yes, sir; I do.

Senator BOND. And could you give us just a short view of the horror story if we do not get it done?

Secretary CISNEROS. Sir, the short view is that many housing authorities who we are attempting to move toward things like changes in the preference rules and the rent rules tell us that they do not want to go through the immense disruption of changing their rent structures if these were not to be continued as permanent law. So they are waiting on an authorizing bill or law in order to do that.

Now, to tell you the truth, some of that might be a rationalization for not doing it. But if we had the law, they would not have that rationalization and we would be able to move them in the direction of what they ought to be doing. So it is very important to set the framework out in the country for what needs to be done long haul.

## EFFECT OF PERMANENT REFORM LEGISLATION ON SECTION 8

Senator BOND. The section 8 program, what impact would failure to enact these reforms have on section 8?

Secretary CISNEROS. I think that the effect is pretty much the same as it is for public housing in general, although we do have some reforms for section 8 that we are particularly interested in, that are beginning to create trouble in section 8. We are getting more and more complaints about over concentration of persons in section 8 neighborhoods or buildings, which we think the end of take one, take all would help solve.

But we await final long-term legislation on take one, take all in order to be able to operate it that way.

Senator BOND. Maybe that is one of the reasons. Maybe you have partially answered my next question. We have worked on achieving some goals in housing reform to remove inflexible rules and disincentives which lead to the ZIP codes of poverty and little incentive to get off welfare, and the second goal of reducing the dependence of State and local housing on heavy Federal subsidies.

But we need to move in these directions, but, other than the imposition of minimum rent for public and assisted housing, there has not been much reaction to the program reforms enacted by Congress. I wonder how quickly the Department is moving generally on these changes and what has been across the board the reaction of the public housing agencies? Are they holding off making these changes in expectation of permanent law?

Secretary CISNEROS. Senator, the purpose of our conference that you referred to earlier on public housing the week before last, which by the way we made a good strong effort to make sure that that had a bipartisan flavor to it, since all of the reforms have been bipartisan—Congressman Lazio, for example, came over and spoke at that conference.

The purpose of the conference was to share with these housing authorities what you have done and what you have allowed us to do and what the laws are going to be as soon as this bill passes, and so forth, in order to move them to action. The reality is that just by us declaring things at the HUD headquarters, that does not make them so across the country. It takes people who are administering these things to get it and then act on it.

So we are now engaged in a strong effort to disseminate the information, and I would say to you that the fast learners, the best performers, are doing it. Others are using excuses why they will not or cannot, or the law is not made permanent, and so forth. But the fast learners, the best performers, are out there now figuring out how to get this done. But we do need the permanent law in order to make this the universe for everybody.

## MOVING TO WORK DEMONSTRATION

Senator BOND. What is the status of the moving to work public housing grant program and what is your position on the House authorizing bill which would expand the demonstration by permitting up to 300 public housing authorities instead of 30 to participate?

Secretary CISNEROS. We are generally in favor of that demonstration, though we think that increasing it up to 300 ends up being too many, especially when the House version specifically requires that New York City be included and stipulates some other large housing authorities. We believe that adding New York City and others that are stipulated and taking it to 300 ends up being about like one-half of the total public housing units in the country or so. It is a very substantial number. And some of the things that then are deregulated simply go too far, too fast, when roughly one-third or one-half of the total stock is deregulated in one fell swoop.

For example, the complete elimination of the Brooke amendment overnight on one-half of the public housing is hardly what you would call a demonstration. That is not in the spirit of a demonstration. So we think 30 is probably—we could stand more than 30 if the Congress wants to do more, but 300 goes beyond the spirit of a demonstration. So 60, 50, or 70 or something makes sense, but not 300.

Senator BOND. OK. Thank you, Mr. Secretary.

Senator Mikulski.

## EMPOWERMENT ZONES

Senator MIKULSKI. Thank you, Mr. Chairman.

Mr. Cisneros, in your chart you talked about, and in your budget request, about expanding empowerment zones, the number of empowerment zones.

Secretary CISNEROS. Yes.

Senator MIKULSKI. Is that right?

Secretary CISNEROS. That is right.

Senator MIKULSKI. When we created legislatively the six empowerment zones, I did not know—I thought that six was going to be six. Do we need a new legislative framework to expand the number?

And then No. 2, apart from that—that is a process question. But the empowerment zones have been out now for about 18 months since they were awarded. Do we have any kind of evaluation on what these six cities have done with the empowerment zone, and have they truly created jobs, moved toward work force readiness, and created zones of public safety, which I believe were their original purpose?

Secretary CISNEROS. We do have formal evaluations underway, although these tend to be longer run evaluations which are going to prove out in the 3d year, 5th year, 7th year, 10th year kind of evaluations, because it just takes that long to see these kinds of results.

The record I think is mixed. Some of the empowerment zones are particularly strong. Detroit's, for example, has over $1 billion of documented private investment now in place. Others have not moved as fast because they got hung up on community disputes over who would have the power, city hall or the community-based organizations, and they have yet to make their first allocation of funds, for example.

Assistant Secretary Cuomo, who spends a lot of time on the empowerment zones, may wish to participate in the answer to this question.

## INCREASE EMPOWERMENT ZONES

Senator MIKULSKI. Well, you just need to know I just have a very little amount of time, and let me make my point. I would like to know as we move toward our markup really what are the early findings on these six cities. I believe you are encountering tepid support for expanding them, only because there is no real knowledge about whether the empowerment zone concept really does help cities help themselves.

As you know, we took the original Bush-Kemp idea on enterprise zones, value added it to create the concept of empowerment zone, which was far broader and far reaching. I myself am a supporter of the empowerment zone concept, and, of course, my own city has benefited from it.

My own city's results are quite mixed, as you know, and a bit sluggish in terms of achieving results. Apart from that, I think we really do need to look at that so that then our colleagues could be moving forward, that if these empowerment zones really look like they are creating opportunity then to talk about expanding them. But if the results are too early, perhaps this is something that needs to be, not jettisoned as an idea, but to move forward in the future.

Secretary CISNEROS. The point is well taken, Senator, and I think what we ought to do is prepare, not an actual evaluative scientific evaluation, at least a compilation of the status and successes of the existing zones, that we can use in the framework of making the case for a second round.

## ELIMINATION OF WORST PUBLIC HOUSING

Senator MIKULSKI. Are they really working or is it still too early to tell? And maybe we need another couple of months to know really what they do and lessons learned and what we need to do to expand the concept in a very sound fiscal and social responsible way.

I would like to now go to the issues of your reform effort, one that I know we concur on. In your remarks you talked about bringing down the worst of public housing and then creating opportunities. And again, in my own home town we do not seem to be bringing down not only the worst, we seem to be bringing down most. Of the 86,000 units, you are talking about tearing down 4,000 units in Baltimore, which is 5 percent of the total Nation, which is interesting.

So I would hope that when we look at tearing down we are very clear about what is worst rather than what is the most, because some public housing, as you know, is working very well.

Secretary CISNEROS. The plan for Baltimore, as you know, Senator, is to bring down, at least, in this first stage—there may be more as we go, but Mayor Schmoke set out for me at the beginning of the term with then Governor Schaefer the only plan like it in the country, which is to bring down the four remaining high rise developments in Baltimore: Lexington, Lafayette, Flagg, and Murphy.

Senator MIKULSKI. And that is 3,200 units, Mr. Secretary.

Secretary CISNEROS. Lafayette is now down. Lexington is coming in August. I may have those reversed. Flagg is scheduled about 2 years out and Murphy a couple years after that. So the timeframe in Baltimore is 6 years from start to finish.

Senator MIKULSKI. But still, it is 5 percent of your 86,000.

Secretary CISNEROS. No question.

Senator MIKULSKI. So that is why the question is, if we are going to tear down all the public housing then I think the committee needs to know about it.

Secretary CISNEROS. No, not all.

Senator MIKULSKI. So that is one issue. But then what happens when we tear down, which goes to your next part of your reform, which is to make sure that local housing authorities are responsible?

Secretary CISNEROS. Absolutely.

## PUBLIC HOUSING RECEIVERSHIP

Senator MIKULSKI. You have now moved very aggressively in terms of receivership, which is a really enormously sad and often a draconian step. What do you do, you meaning HUD, to intervene early so that we do not move into that? And then, No. 2, where there are local housing authorities that either ignore you, thumb their nose at you or are arrogant, which I note again in the Baltimore metropolitan area, to reforming so that you don't have to move to receivership?

Secretary CISNEROS. Senator, as you know, our relationship with the Baltimore Housing Authority has been a kind of a spotty one, in that when they do good things, like work on some of these high rises, we try to support them. But you know, we had a big fight over——

Senator MIKULSKI. Put Baltimore aside. I am just using it as an example that can stonewall.

Secretary CISNEROS. The answer to the question of what we do early to intervene is things like a massive new commitment to training, a massive new commitment to standards, harder analysis of their performance, the so-called FEMAP, performance measurement system, so we know when a housing authority is getting near the failing point and we treat it as if it were troubled, even though it is over the 60 mark, as in San Francisco, where we have taken over San Francisco, although technically it is not below 60.

Those are the kinds of things we are doing with greater effort today.

Senator MIKULSKI. You get in there early and act as if you had taken it over.

Secretary CISNEROS. Yes, ma'am.

Senator MIKULSKI. Do you need the concurrence of a mayor to do that?

Secretary CISNEROS. Yes; in most cases, yes. Mayor Brown in San Francisco asked us in, asked us in, knowing that he had a problem.

### HOUSING AND URBAN DEVELOPMENT'S ROLE AS A RECEIVOR

Senator MIKULSKI. I know my time is expired, but may I ask, what do you do when you take it over? When you take it over, is it yours forever?

Secretary CISNEROS. No.

Senator MIKULSKI. Do they need to then dig out?

Secretary CISNEROS. Let me be brief because I know——

Senator MIKULSKI. Because you see, this is why we are losing support for the program. If we do not have good management that then sticks true to the purpose and mission, which is to help the poor be able to live a better life and create an opportunity so they can move to an even more improved life, then we all get an F.

Secretary CISNEROS. What does it mean to take over? What it means is that we send in a recovery team, including some of the best people we can get in the country from other housing authorities. In other words, we take, as in the case of Chicago, junior level people who we had identified as real comers in the business and assemble them in Chicago to take over and run the key operations of the Chicago Housing Department, which were in meltdown.

We suspend a lot of Federal and sometimes State rules that are a problem, as in New Orleans, where the State civil service system has prevented them from being able to bring good people to the job.

We envelope them with time and attention to bring back key systems, like finance and accountability and section 8 and so forth. Those are some of the things that we do.

In the Chicago case, Joe Shuldiner, our Assistant Secretary, went out to run it. He is now out there. In the New Orleans——

Senator MIKULSKI. So you bring in new management, you look at the rules and regulations that help create a dysfunctional organization.

Secretary CISNEROS. And key systems, whole systems, like the whole financial accountability system, the whole section 8. In Chicago, we privatized the section 8 system. In San Francisco, we are privatizing, bringing in a private firm to run the section 8 operation. In both cases they were characterized by graft and corruption.

We brought in private management to run the accounting and financial system in Chicago, a new firm, and that brought in a new manager to run the pension system. They lost $15 million in their pension system.

We had near meltdown in some of these things. They had not been managed in 10 years.

Senator, I have a card that I carry around with me that lists the performance scores of the housing authorities, and I carry it around with me because it shows me who has now failed and who is about to or needs help. And I would like you to take a look at this.

Senator LAUTENBERG. Is that publicly released?

Secretary CISNEROS. Yes; I will get you a copy of it.

Senator LAUTENBERG. Have you released that?

Secretary CISNEROS. Yes.

Senator MIKULSKI. Thank you, Mr. Secretary, and thank you for being willing to take tough stands.

Senator BOND. Thank you, Senator Mikulski.

Senator Lautenberg.

### RESPONSIBILITY FOR NEGLECT IN PUBLIC HOUSING

Senator LAUTENBERG. Thank you.

Mr. Secretary, as you know, in Newark a few years ago we had a matter in which disaster overcame the place with such ferocity that we actually lost a couple of lives. A person walking up the steps to try and get to an upper floor when the elevators would not operate had a heart attack and died.

I went into the place with the authority, and this was, as I remember it, an assisted housing project. What they failed to do deserved, in my view, criminal sanctions. The place—people were relying on heaters. A disabled woman had to sit next to a heater in the cold weather so she could at least keep alive.

I would ask, in connection with Senator Mikulski's line of questioning, whether or not public housing or assisted housing—you do not have to furnish this now unless you happen to have it at your fingertips. Where has been the biggest rate of failure, of neglect?

We had a devil of a time, the Government had a devil of a time, I know, in this Newark situation in finding out who the owners were.

Secretary CISNEROS. Yes.

Senator LAUTENBERG. Disguise after disguise and coverup after coverup—outrageous. And these poor people are paying enormous sums, their own funds plus assisted, $700, $800 a month, for places that you would not put your animal, your pig in. It was just awful.

Do we have any indications? Because one of the questions I think that underlies what Senator Mikulski was talking about is, can we get the training for local authorities, for local administration, community administration, to make these things reliable enough so we can say, OK, we will do a quick audit, and we know that they are working?

Secretary CISNEROS. Senator, the issues that you raise exist both in public housing and assisted housing. And though in the popular image, in the popular mind, they are worse in public housing, in fact, in public housing we know who to hold accountable and where to go. It is a public entity. It is a public housing authority. We can take it over, we can put it in breach, we can put it in receivership. We can cajole it into results.

But the equally bad personal conditions, housing conditions, that exist in assisted housing frequently are far more frustrating because, first of all, as you say, there are layers of ownership. And then when you finally find it, you find people who know how to use the courts and the litigation system.

We are involved in a place called Clifton Terrace right here in Washington, DC, right now where they basically dare us to put them in bankruptcy. Previous HUD generations have done this four or five times with these same owners.

There is a place in Taylor, MI, which the city has basically thrown up its hands in utter despair. In these times, the people of Taylor, MI, passed a bond issue to buy the place. That is how serious a blight it is on the community, for a community the pass a bond issue and a tax increase to buy it back from the ownership, and the ownership basically is known for his litigious style and just will wait out anybody.

So it is a major, major problem. Nic Retsinas has done a better job, I think, than any FHA Commissioner before him of putting in place SWAT teams to go in and look at the financial and physical condition of these places and then start the litigation.

But I have got to tell you, we have a big problem—and I ran into this just last week—with our own HUD staff who had been told over the years not to put these buildings into foreclosure because they bring them into the FHA inventory then as liabilities. And so they bear with them and they forbear and they get to know the owners and the rest of it, and never do what needs to be done, which is to throw them off the cliff.

I have no patience for these people, these owners who have been making this ungodly amount of money over the years, leaving people in these horrible conditions, and then expecting us to bail them out.

I think Nic is getting a handle on this. But I have got to tell you, I was in Prince Georges County last week and the county executive of Prince Georges County over here gave me six properties—Glen Arden, Nalley, Dupont, Fort Dupont—six properties. Saturday I went back to Prince Georges County on another matter and a mother stopped me and she said: "I live in Glen Arden." I recognized the name because the man had told me the week before about this HUD-assisted place. She said: "My 13-year-old son was abducted from there and they found his body in a drainage ditch nearby."

I do not know how long we have to hear these God-awful stories about HUD-assisted housing. It is just unacceptable.

## INCREMENTAL ASSISTANCE

Senator LAUTENBERG. Mr. Secretary, in your comments and the record we know that there are roughly 5.3 million households either in substandard housing or paying more than 50 percent of their incomes for housing. Meanwhile, the list is long, over 1 million people languishing, waiting for public housing.

Yet, in the past 2 years, largely because of deep cuts in domestic discretionary spending, Congress has eliminated funding for incremental assistance. Two weeks ago the House subcommittee that mirrors this one marked up a bill that again failed to provide funding for incremental assistance. Additionally, last year's bill cut nearly $300 million from homeless programs, and the House markup this year slashed the same amount from the administration's request for 1997.

Can you give us any insight into the impact of the lack that incremental housing has had on those currently on public housing waiting lists? What is the relationship between the incremental cuts and the cuts that have been forced on us for homeless programs?

Secretary CISNEROS. Yes; let me respond, but I want to respond in an evenhanded way, because I want to give fair treatment to Senator Bond's concerns on the budgetary side, and I know how strongly he feels about this. First, the Senator knows, on the other hand, the problem that we confront by having a housing policy that has no incremental vouchers. We have a new study that shows that the gap, the so-called affordability gap, the gap between what people can afford and what housing costs, is wider than ever before. It is 5 million families who are outside of affordable housing today.

The waiting lists are 4 years long for housing in most communities. I just saw the numbers on Chicago the other day. The waiting list for section 8 was closed in 1985 and the people who are now getting housing came on the list in 1981. That is an extraordinary situation. In most cities it is 4 years. But still, 4 years is too long.

I believe that the best strategy for housing people is section 8. Given that we are not building new public housing, we are replacing what we are bringing down roughly, not even one for one any more but roughly, the best long-term strategy is section 8, a better section 8 program than we are running today, but the best answer is section 8.

Now, to be fair to Senator Bond's view on this, there is the renewals problem, which grows at a rate that in due course it offsets other HUD programs, given the tightness of the budget scenario that we confront today. So this is the classic Gordian knot. There is no way out of this dilemma, except to go in a very prudent fashion, small amounts of section 8, try to keep the program alive, not exacerbate the renewals problem.

But we do have a national affordability issue, there is just no denying.

Senator LAUTENBERG. I thank the chairman for the generosity of the time here, but also for his interest in fairness—and you confirm that, Mr. Secretary—in getting the job done, responding to the serious need for budget trimming, and so forth. But the impact out there is so serious, and I am trying to find out where the need is the greatest, where the pain is the deepest.

Thank you, Mr. Chairman.

### DELAY IN REISSUING SECTION 8 CONTRACTS

Senator BOND. Thank you, Senator Lautenberg.

As I think I indicated in my opening remarks, in this subcommittee we have very difficult allocations to make within the overall amount of dollars that we have available, and that is what we are in business to do. And if somebody can show us a place where we can reduce lower priority spending, as you have seen, we are more than willing to take it.

But frankly, there are so many problems in HUD which, frankly, continue to increase. Let me just address one of those, Mr. Secretary. For 1996, Congress required that the tenant-based section 8 contracts, where a resident moved out, be held for 3 months prior to reissuing to another eligible family. This is similar in effect to an incremental voucher, but we did so because we had reduced the outlays by deferring the utilization of the amounts appropriated.

The House subcommittee has recommended continuation of this delay through 1997 for this very reason. What is the Department's position on using that as a means of keeping outlays within our available dollars?

Secretary CISNEROS. Well, sir, we understand its role as a financial tool, though it does contribute to the unavailability of incremental vouchers for the people who need housing. And I frequently go to communities and am asked by citizens questions about answers they get when they go on the waiting list and they are told it will be just that much longer before they can have housing.

So I understand it as a financial tool and support it as a financial tool, but it does have implications out there in the wait for housing.

Senator BOND. Because of the housing, the delayed expenditure in the means of outlaying, the 3-month delay in reissuance of section 8 was equal to a $315 million cut in public housing operating subsidy, or almost $3.8 billion of appropriations for the CDBG program.

Secretary CISNEROS. Right.

### OPERATING SUBSIDIES AND PREFERENCE RULE

Senator BOND. So that is the point with respect to the outlays and the competing priorities we have.

Let me turn, let me go back to public housing, which again is a very serious problem. We have gone forward with tenant selection criteria, tenancy limitations, rent reforms, not only to permit families with a broader range of incomes to occupy public housing, but to provide increased revenues so that we can expand the available dollars for assisted housing.

As I understand it, while rental revenue alone was sufficient to operate public housing for the most part prior to the seventies, the Brooke amendment and the tenant selection criteria eroded this source of income, which now constitutes only about 39 percent of the operating costs for PHA's nationwide. While subsidies and the

States have provided operating support, the budgetary pressures have limited it.

The Federal Government has constrained other income sources for PHA's, such as categorical grants and section 8 administrative fees.

Would you concur that all these reasons have led to the very heavy dependence of the public housing authorities on the operating subsidies?

Secretary CISNEROS. Senator, I would say that, of the various reasons that are cited, the primary dynamic was the change in the preference rules, which were well intentioned when they were enacted, but had the effect of admitting the very poorest of the poor, including the homeless and others, well intentioned, but the income of persons in public housing dropped precipitously.

For example, you heard me say before that the average income in public housing was 35 percent of the area median income as recently as 15 years ago. It is now 17 percent on the average and dropping even now. In Chicago they tell me the average income in public housing is 10 percent of the area median income.

I was, as I mentioned earlier, with New Orleans people this morning, who described to me how the average income in public housing has dropped to one-half of its level just 3 years ago. So even on our watch the drop has continued.

I would say that it is the preference rules more than any other thing that have been the factor, and that what we have done through your appropriations in allowing working families in, as well as the targeting that is in Congressman Lazio and Senator Mack's bill, while we disagree with some of the targeting, generally goes in the right direction in terms of allowing housing authorities the flexibility to bring in working families.

### PREFERENCE FUNDING SYSTEM

Senator BOND. Let me get to the point on that statement I made. As I understand it, for fiscal year 1997 the full operating subsidy calculation under the traditional performance funding system, PFS, would indicate an appropriation of $3.2 to $3.3 billion to meet the eligible costs.

The administration's budget, however, proposes only $2.9 billion. The House appropriations bill freezes the account, at least the initial mark did, at $2.8 billion. That could result in a 15-percent shortfall in the operating budgets of most PHA's.

What kind of impact is that going to have?

Secretary CISNEROS. A serious impact, and we have not been funding at 100 percent for the last several years. We have been funding at 90 and 85 percent. So that tracks the practice of the last several years.

But I have to say, these are decisions that we made in the context of the tightness of the budgets and the constraints that we face. They are choices, but it does have an effect on the housing authorities. As I said earlier when I showed the chart, this is one of the areas where the housing authorities have very little flexibility, because there is no other source of the money.

That leads to this fight that we are having right now with the House about the Brooke amendment, because the housing authorities, squeezed for cash as badly as they are on the operating subsidies, look to the residents for more money and want to remove Brooke so that they can raise rents. We do not have a problem with the removal of Brooke on higher income tenants. We just think there need to be stiffer protections for the removal of Brooke on lower income tenants, because I do not want to see people evicted because they cannot pay any more at those lower levels.

Senator BOND. I do not think we are going to go down that route. Senator Mikulski.

### FEDERAL HOUSING ADMINISTRATION—SUBSIDIZED UNITS IN SUBURBAN AREAS

Senator MIKULSKI. Thank you, Mr. Chairman.

I would like to, if I could, Mr. Secretary, pick up on the FHA-subsidized units in the suburban areas.

Secretary CISNEROS. Yes, ma'am.

Senator MIKULSKI. And you referred to Prince Georges County. That is administered by a very dynamic African-American county executive, Wayne Curry.

Secretary CISNEROS. Yes, ma'am.

Senator MIKULSKI. Everything he said I can only echo, because he and I have discussed this. Let us talk about that. Let us talk about the concept.

Secretary CISNEROS. And the specific properties.

Senator MIKULSKI. We do not have to talk about the specific properties. The point is this, and this goes to the point that I wish to make: I am deeply troubled that FHA-subsidized units are now becoming a source of neighborhood destabilization, also because they ultimately do go into bankruptcy and FHA liability. And No. 2, a hollow opportunity for the poor who move into them with section 8. Hollow opportunity, new class of slum landlord, and, No. 3, liability for the taxpayer.

You talk about your SWAT team. I am going to play out something and see then if we can discuss how we can do this. Two things. No. 1, what I am told by people in the suburban communities and people like Mr. Curry, it is because HUD does not stand sentry over these projects early enough, so that then the SWAT team is required, that your local HUD management does not stand sentry over certain things: No. 1, the number of section 8's that go in, so that you essentially recreate public housing in the suburbs, only it is owned by the private sector.

No. 2, the private sector does not screen for whatever rule, does not then maintain; and then, No. 3, does not maintain the property; and then No. 4, the whole issue of public safety and security are minimized.

Because there is no early intervention or because they allow it to become 80 or 90 percent section 8, you have got that. Also, the good guy, the good guy FHA landlords, if you will, say the rules are so damn strict they cannot evict the bad and the bad drives out the good. So that if you have say 15 percent section 8 and 14.5 percent are just swell, but you have got 5 percent that get into drug dealing or whatever, that then causes the deterioration and your nonsection 8 want to move out.

Now, I come back then that SWAT teams are great and so on, but they are at the end. That is putting out the fire. What we are looking at, what I am asking you is, what is it then you are going to do with your own HUD offices that tells them that they have got to watch these FHA-subsidized ones before they then just essentially slide into creating these problems?

Secretary CISNEROS. Thank you for raising the point. These are very serious problems.

Senator MIKULSKI. Do you feel I have outlined it?

Secretary CISNEROS. Yes, ma'am.

Senator MIKULSKI. Hollow opportunity for the poor.

Secretary CISNEROS. I hear you.

Senator MIKULSKI. New class of slum landlord and liability for the taxpayer.

Secretary CISNEROS. Yes.

Senator MIKULSKI. But no tools to work with the good guy landlords or good guy tenants.

Secretary CISNEROS. There are excuses that we could give you, like the fact that in the private sector real estate business they have maybe one person for 12 properties to oversee the finance, but at HUD we have one person for 150 properties to oversee it.

But the truth of the matter is there is a lot of fault on the HUD side. When I go to places like Prince Georges County and the HUD people tell me that they cannot get the HUD FHA office to respond, then I know we have a problem.

I think Nic is breaking his back trying to change this culture, change this system, but in some respects the fundamental program was flawed. We attracted private sector people not because they wanted to run property or they had experience as real estate magnates, but because they wanted tax breaks and they were investors. So, Nic, you may want to speak to some of what you are doing in a concrete way.

Mr. RETSINAS. Thank you, Mr. Secretary.

Senator, your observation is right. They may be right in a minority of cases, but that does not make them less right. I think if you look back, there really was a perception on the part of the HUD offices, well intentioned, to do all that we can do to avoid paying an insurance claim, put a priority on the finances of the FHA insurance fund. And that is fine; one understands that motivation.

What we have tried to do over the last 2 years—and it is difficult to change attitudes and cultures—is to change that notion. Now the first priority is to make sure that the housing is decent, safe, and sanitary.

I concede, Senator, when I first joined this administration, the notion of a SWAT team was one I wanted to forestall, because having a SWAT team is a confession that the basic system does not work. But indeed we have put in a SWAT team and we have changed over 400 management agencies.

But you are absolutely right to observe that the fundamental problem is the design of the program. Let me speak to one of the three or four points you made, which I think is a good one, an excellent one. When assisted housing in the past got into trouble, what we would do is look at the financial statements and say: "Aha, the solution is more money." And how do we get more money in the projects? We can increase the number of section 8 certificate holders or we raise the section 8 rents.

Indeed, what we did is make the financial statements look pretty good for a while. But, in fact, what we have done over time is dramatically change the characteristics of projects. Projects that were perfectly appropriate as mixed income projects, because they had difficulty and because of the rules and regulations you allude to, we ended up piling on section 8 assistance. And, as a result, the warehousing of the poor that we have talked about exists for the assisted housing.

Well, I think there are two lines of attack here. One is the reality of the 1.5 million units or households in assisted housing. They are not going to go away. The SWAT team added enforcement efforts and the applicability of the one strike you are out to assisted housing, are beginning to attack it.

But in many ways—and I assume we will talk later on this afternoon about the proposals to reengineer going portfolio—I firmly believe that as long as we continue to resist the market, that is as long as we overregulate, as long as we try to fight the market, then the market is always going to be smarter.

Indeed, one of my biggest frustrations is not just how smart the market has been to try to overcome these regulations, but, again with all due respect to I am sure the scores of lawyers in this room, is the litigious society we exist in.

Senator BOND. Mr. Retsinas, I am going to have to step out at 4:10 for a brief radio interview. I will turn it back to Senator Mikulski at that time if she wishes to continue.

Senator MIKULSKI. Why do we not pick up, then, on this——

## PUBLIC HOUSING DEPENDENCE ON OPERATING SUBSIDY FUNDS

Senator BOND. Let me just ask a couple of questions. I do not want you sitting around.

Senator MIKULSKI. And then you and I can follow up on that afterwards.

Senator BOND. I want to touch briefly on that, and let me come back to one thing on public housing. It is my understanding the normal turnover of units in public housing is only about 10 percent a year. The earned income levels of other remaining residents are not likely to increase dramatically since 40 to 45 percent of them are elderly or disabled.

Assuming that is the case, won't public housing authorities remain very much dependent on operating subsidies for years to come, even with more flexibility in resident selection criteria and rent rules?

Secretary CISNEROS. Yes, sir; I believe that is true, although I do believe that we could do a better job of encouraging work, changing the rent rules so people can go to work and then supporting them with training and encouragement to work. Our so-called campus of learners, which focuses on mandates for education, will actually have some developments where we write leases in such a way that, unless you are getting an education and training and en route to a job, you cannot live there.

All of those things will have some effect, but it will take time.

Senator BOND. Are you going to impose those requirements on people already in there?

Secretary CISNEROS. The campus of learners will generally be places that are completely being rehabilitated under HOPE VI.

Senator BOND. I see, so it is still going to have the low turnover.

We have some very tough priorities in allocating scarce resources, and it seems to me, at least, it has been our principle that we should give top priority to avoiding the involuntary displacement of families from existing assisted and public housing. Do you agree with that priority, or is there something that should be a higher priority?

Secretary CISNEROS. No, sir; I think that that is an appropriate highest priority.

Senator BOND. OK. I am going to offer a couple of questions for the record at the end, but on the preservation program—well, let us see. I tell you what. Why do I not turn this back to Senator Mikulski. I am going to have to go.

Senator MIKULSKI. Will you come back?

Senator BOND. Yes; I will just be outside for about 5 minutes.

Senator MIKULSKI. He would not turn it over to me permanently. [Laughter.]

This is called lend-lease. I am ready, though. [Laughter.]

Senator BOND. I will be back about 5 o'clock. [Laughter.]

Secretary CISNEROS. Senator, we may need you to save us.

Senator MIKULSKI [presiding]. While Senator Bond is outside, if we could just follow through, then, if you wanted to complete your comments.

Mr. RETSINAS. Thank you, Senator. I just wanted to again share with you the frustration as we take more aggressive enforcement action. Because of the nature of real estate financing in this country, the nonrecourse nature of the financing and the partnerships and complexities that are formed, it is all too common for owners who are resisting some of that enforcement to take refuge under bankruptcy proceedings, and under bankruptcy laws it becomes very difficult to pierce that legal barrier.

It is not unusual from the point of an enforcement action to begin to move to foreclosure, for that to take 12 months, 13 months, 14 months, 15 months, and in the interim there is substantial disinvestment in the property.

We have sought to find some exceptions to bankruptcy laws that allow us to do that. But we have been unsuccessful.

## PORTFOLIO REENGINEERING

Senator MIKULSKI. While we are waiting for Senator Bond, I want to follow up and then go to the reengineering, if you will, of your FHA portfolio. But did Senator Bond need to hear that? That is different than his mark-to-market. He has his favorite streams that he likes to pursue.

Let me go, as we go to the FHA reengineering, which then is a good time to talk about it—first let us talk about the good guy landlord that has a set of units with good guy tenants or good gal tenants, and the whole issue of not being able to really evict people who begin to present problems within it—the drug abuse issue, the drug dealing issue, and so on.

Now, does your one strike you are out also deal with FHA subsidized?

Secretary CISNEROS. Yes; it does, Senator.

## DISPLACEMENT OF FAMILIES IN THE FEDERAL HOUSING ADMINISTRATION SUBSIDIZED UNITS

Senator MIKULSKI. So that would give them that tool. What other tools would it be to be able to then keep these suburban units—well, they are also in the city, but in my State they are primarily in the suburbs. And to be sure, we are not talking about black tenants in white suburbs. I mean, that is usually, then everybody gets all defensive about it. It is really in Prince Georges County, it is black tenants in FHA-subsidized, like Glen Arden, who No. 1 thought it was a real opportunity, next to working class people who are mortgage-poor, really, because they have left the District of Columbia, they bought their homes, they are working very hard, and then there they are with these troubled areas.

So let us come back, then, to the rules on tenant eviction.

Mr. RETSINAS. The primary application is the application of the one strike you are out principles to assisted housing. One of the difficulties in the straight applicability of this to assisted housing is that, unlike public housing, it is privately owned and as such, it is more likely to be subject to State and local laws regarding evictions.

For example, I was recently visiting a development in New York City and we were talking about a problem tenant, exactly the kind you talked about, and, despite the efforts of the owner, despite the support of the HUD office, the tenant was able to use the judicial processes to forestall. And it really took about 2 years for that eviction to take place, not because of Federal rules but because of understandable concerns of due process at the local level.

So in privately owned housing, that State and local due process does sometimes inhibit.

Senator MIKULSKI. Will you be suggesting some reforms in this area, some legislative changes?

Mr. RETSINAS. Yes.

Senator MIKULSKI. In other words, we are not into sharp-elbowing State and local law. I think we have enough problems with that balance. But really, if you are taking a significant Federal subsidy and then part of the subsidy itself is your tenant's section 8 subsidy, then maybe that, which is governed primarily by Federal law, not the whole unit. I think we need to be creative.

Mr. RETSINAS. I agree, I agree.

## REENGINEERING THE FEDERAL HOUSING ADMINISTRATION

Senator MIKULSKI. Do you want to just say how you intend to reengineer the FHA? And I have another question relating to section 8 and your public housing authority scorecard.

Mr. RETSINAS. In terms of our reengineering, we believe that we have a fundamental problem, in addition to the programmatic issue of the overregulation, the concentration of poor people, what we have talked about before. We also believe that over time it will be difficult to sustain along any dimension, budgetarily, from a popular support point of view, for the Government to pay rent more than anyone else pays for the same unit.

We do not believe that can be sustained over time; therefore, we have respectfully recommended consideration of a proposal that will, to use the phrase, mark-to-market, reduce the rents to a level that are indeed market rents. In order to do so, one needs to make an adjustment or restructure the outstanding indebtedness, because if we just lower rents and do not lower outstanding indebtedness we would have massive defaults and foreclosures.

Senator MIKULSKI. And that is exactly the issue that Senator Bond has been dealing with.

Mr. RETSINAS. Right.

### POTENTIAL SECTION 8 PROBLEMS

Senator MIKULSKI. And we will let him pick up on that.

I want to come to section 8 and then go back to the public housing authority. Section 8 I think has been really a creative tool, is the way you have spoken about it, Mr. Secretary. Certainly, for elderly and disabled it has been a very important tool, and for many poor people it has. But I am observing that section 8 now is taking on many of the same characteristics, the same characteristics that we've just also talked about with FHA and public housing, which is that it is becoming a hollow opportunity, we're creating a new class of slum landlord, and that essentially all we are doing is dispersing problems in neighborhoods.

And as you know, in most urban areas neighborhoods fall into three categories: siege, stress, and stable. And usually if you get a section 8, more often than not you move into stress, which creates other kinds of problems. You are not going into stable. I know that is one of the issues involved in some of the lawsuits.

My question is how are we ensuring that, No. 1, the landlord is not using above-market rents, ignoring their responsibilities, and loading up, if not literally in these vertical public housing or vertical FHA, but in a neighborhood—you sometimes then have in one ZIP code where there might have been 15, 10 percent section 8, suddenly it becomes 35 and 40. Once it reaches that, things move into a siege situation.

So that is No. 1, the concentration; the landlord himself keeping a responsible property. No. 2, the over concentration of section 8 in neighborhoods, therefore becoming a tool that, once again, all we are doing is recreating public housing, but in a different way, and, therefore, a hollow opportunity for the poor, and, at the same time, moving away from the mission of what section 8 was, which was by providing a subsidy to move out of public housing people could practice self-help, be in jobs, job training, that this moves to a better life, et cetera.

You see what I am saying, where section 8 itself now is becoming a hollow opportunity and a form of neighborhood destabilization.

Secretary CISNEROS. Senator, we are well aware of the issues that you raise, and, in part, because you have asked us to look at places like Patterson Park in Baltimore, and we have had people who you have recommended to join our work groups on the subject, so that we can understand from their point of view what their neighborhoods are going through, the cycle of stability, stress, and siege that you describe, which is an accurate description of it.

We are working to do things like deal with this, this take one, take all rule, which had the effect of in a building or in an apartment complex, garden apartment complex, if the landlord took one section 8 tenant he or she was now required to take every section 8 tenant who came along, and effectively lost control of their building, buildings changed, et cetera, to where under our new rules, under the legislation we seek, landlords can take as many or as few persons as they wish.

That has the added effect of encouraging other landlords to come and participate in the program, because they will not lose control of their properties, which nobody in their right mind who has made an investment wants to do.

Other things. Really, we are now looking at housing authorities not just for how they score, the little scorecard I gave you, but how they carry out section 8. We are going to put in place a grading system called SEMAP for section 8.

Senator MIKULSKI. What is it called?

Secretary CISNEROS. SEMAP. That is called FEMAP. This is called SEMAP. It is section 8—I am not sure what the acronym stands for.

### PROGRAM IMPROVEMENTS FOR SECTION 8

Senator MIKULSKI. Do not worry about it.

Secretary CISNEROS. It is a description of—I will get it for you. It is a description of how they perform section 8.

And we are now beginning to take over section 8 programs from cities who cannot manage their section 8, who have a history of corruption or have a history of bribery or other abuses that occasionally occur in section 8.

I have asked Betsy Julian—she has actually had several work groups, assembled the group, and then been working at this pretty steadily. And Betsy, if you could just go through a kind of a litany list of the things that you are looking at or have thought about for improvements in the section 8 program.

One of them, Senator, that I will tell you Betsy and I have a little bit of tension, because I want to make sure that we assess our contribution to concentration as an element of whether or not we go back in a neighborhood, but we have not found between us a good way to do that, because what we do not want to do——

Senator MIKULSKI. I will tell you, I would rather you two be tense than these neighborhoods be tense.

Secretary CISNEROS. Yes; I understand, I understand.

Well, Betsy.

Ms. JULIAN. Well, I think the tension actually has to do with the fact that you say that the section 8 program is becoming a destabilizing force.

Senator MIKULSKI. It can.

Ms. JULIAN. Actually, I agree with you completely.

Senator MIKULSKI. The original intent——

Ms. JULIAN. I want to say, it has been in many neighborhoods. Everything that you said about the program and the way it operates is my experience absolutely. Ten years ago when I first looked at this in my hometown, all the section 8 families were concentrated in two ZIP codes, in spite of the fact that it was supposed to be a program of opportunity and it was supposed to expand.

So I just say that we have that problem. Section 8 has been concentrated again and again, even up until now. So as we address this concentration issue and try to prevent it from happening and doing the same thing to neighborhoods as it goes into it, we have some experience. We are seeing what we have done to neighborhoods in inner cities, for example, by letting it concentrate there over the years.

The things the Secretary is talking about that we believe have some real potential, we know that we have to attract good landlords who will monitor the program and will not just use section 8 to become a source of income and let the property go.

I think directly tied to that is the notion that you have to keep a limit on how many people get there. That is where our tension is. But it more has to do with what you do about neighborhoods that are already heavily concentrated, how do we deal with those. I think through a well-managed section 8 program, which you do not find in a lot of places that think you are concerned about, you can have an administration of the program that works with landlords, make sure that you have a broad enough selection of landlords so that you do not have to concentrate in one neighborhood or one complex, because that is what kills it. That is what our experience tells us kills it.

In terms of a good landlord, there is no substitute for good administration by the housing authority.

Senator MIKULSKI. Who has the responsibility for standing sentry to make sure that happens? The local housing authority?

Ms. JULIAN. The local housing authority, under the way we are set up, has the first responsibility, Senator. And I think one of the things that you have seen, at least I have seen at a couple of housing authorities—and they will probably tell you this—it is the interplay between their need to finance their operating, the public housing program, and their use of their administrative fees. They oftentimes have not attended to their section 8 program. They have let it slide. They have really let it be a sort of take-care-of-itself program.

The housing authority has the first responsibility. But HUD has a responsibility, and we have never had this, the thing the Secretary referred to, that SEMAP, an evaluation program to tell us, is the section 8 program being good. We have never had that kind of evaluative program.

## MONITORING OF SECTION 8 BY PUBLIC HOUSING AUTHORITY

Senator MIKULSKI. Then I will ask you that, then: "So that local housing authorities have let the monitoring and accountability of section 8 slide."

Ms. JULIAN. At the first instance, public housing.

Senator MIKULSKI. Yes, first level. And then your HUD offices, you know, whether it is the local Cleveland HUD, the monitors, et cetera. I do not want to name a city. Then I do not believe they have stood sentry over the local housing authority.

Ms. JULIAN. No; as a matter of fact, I cannot remember now, there was an inspector general report about the way HUD administered and monitored its section 8 program back in the late eighties, I believe, or maybe early eighties, that said we had done a terrible job. And I think that we have been aware that we have not been able to monitor the section 8 program as well as we should.

Some programs work very well, just like public housing. But you are familiar with ones that do not. A badly administered section 8 program can do as much damage as a badly administered public housing program.

Secretary CISNEROS. Senator, let me give you an example of something we are considering.

Senator MIKULSKI. Well, yes, and then I have to return to Senator Bond.

Secretary CISNEROS. There is something called housing quality standards, which housing authorities have to go out and inspect the house before they can let a section 8 person go into the house. Our original thought was we should include a kind of a measure of concentration and impact on the neighborhood as part of the housing quality standards.

But I think Betsy has raised with me, very appropriately, that sometimes if you gave the housing authority that power, they could use it to steer people away, section 8 residents away from the neighborhood. In other words, they could say: "You do not believe in this neighborhood, this is not a good neighborhood for you." So that is the kind of thing that we are wrestling with.

Senator MIKULSKI. So we have to be very careful, because we are the United States of America. People should have the right—and we have fair housing and we have the opportunity for people to live where they choose. So we understand that as an imperative. So words like "steer" really have really flashing lights all around them.

Secretary CISNEROS. Sure. That is the problem.

### PUBLIC HOUSING AUTHORITY SCORING

Senator MIKULSKI. That is a nasty and distasteful legacy in this country. But, at the same time, we do not want Federal funds to be creating a new class of slum landlords and—I will come back to the word I used—a hollow opportunity for the poor, where it is just empty.

I know Senator Bond is ready to return to his questions and we will be ready to wrap up. I just want to make one comment here about your 40 largest public housing authorities and your score. I see where my hometown is rated as standard. Quite frankly, I am surprised when we have had over 13 convictions in one housing area, an inspector general report that raises significant issues and concerns about procurement policies, that the mismanagement of section 8, with the tearing down of Lafayette, where there was no monitoring or tracking.

Then if we are standard, then God only knows what the troubled is. And I would hope in the process, because I will hear it again—the head of the local housing authority continues to wish to make me the issue rather than focusing on the issues. I regret that. Really, all I want is that we have real opportunity for the poor and that we move ahead.

But I hope that our norm, if it is called standard, is not the norm and the acceptable norm.

Secretary CISNEROS. Senator, one of my refrains with our team here is that our standards are very low, unfortunately. And hopefully, if we can get a handle on the worst of the worst, which was left unattended for years and years and years, like New Orleans and like Chicago, then we will toughen our standards and we will bring others into the maw.

But we have had our hands full dealing with the most unacceptable places.

Senator MIKULSKI. Let us make waste, fraud, and abuse——

Secretary CISNEROS. An element of management.

Senator MIKULSKI. Yes.

Secretary CISNEROS. I agree.

Senator BOND [presiding]. Thank you very much, Senator Mikulski.

We probably would not have ranked—St. Louis ranks below Baltimore, but that is probably because you stole our Browns and made them the Orioles.

Senator MIKULSKI. Well, that moves up the housing quality standards. [Laughter.]

Senator BOND. In both cities.

## SECTION 8 MANAGEMENT ASSESSMENT PROGRAM

Senator MIKULSKI. If only public housing was as good as Camden Yards. Would it not have been great.

Secretary CISNEROS. SEMAP, stands for Section 8 Management Assessment Program, S-E-M-A-P, Section 8 Management Assessment Program.

Senator MIKULSKI. Well, I will never forget that. Thanks. [Laughter.]

## REENGINEERING AND INTERMEDIARIES DEMONSTRATION

Senator BOND. Mr. Secretary, last year the Department advanced the Mark-to-Market Program, on which Congress deferred action. We substituted a simple 1-year extension and a $30 million demonstration authority. That we put into law barely 6 weeks ago. This year HUD has replaced its proposal with one called portfolio reengineering.

The Senate Banking Committee has been developing an alternative proposal I am going to mention in 1 minute, and the House Appropriations Committee is working, proposing a workout plan, but limited only to those contracts which expire during fiscal year 1997.

Clearly, the committee's proposed demonstration authorities reflect our assessment of the confusion and the very differing expectations of the various parties. A crucial issue appears to be the Department's desire to utilize the services of so-called third party intermediaries to work out the project details. What steps is the Department taking to implement the demonstration and what is the role of the third party intermediaries?

Secretary CISNEROS. Let me say in introducing Nic to speak to this, Senator, that we are grateful for the demonstration because, although there was a lot of disagreement over whether or not we ought to go with the full program, your agreeing to the demonstration was a start for us in this critical area.

Let me also say that we want to make sure, as in the case of the last demonstration that we spoke of a little while ago in public housing, where they went all the way to 300, we want to make sure that as we talk about the new measure that you are talking about that it accomplishes what we need accomplished here. Our initial look at it is it probably does not go far enough, it is not tough enough in the marketplace.

Mr. RETSINAS. Thank you, Mr. Secretary.

Just one comment first, Senator. You are right to observe that, while there remains a substantial challenge, how do we restructure this portfolio and deal with section 8 rents, I am pleased with the conversion of ideas on that. We will be commenting more specifically on the Senate staff proposal, but many of the basic concepts are ones that we share: the need to reduce rents that are above market, the need to restructure, an understanding that HUD cannot do it on a project-by-project basis. So there is a lot of room for similarity.

The demonstration program we think can add substantial value. As you point out, it was passed recently in the appropriations act and gives us the authority to try a variety of different approaches. As your letter points out, it is necessary for us to lay an appropriate foundation for that.

The way we have decided to do that is really allow a wide variety of demonstrations. As you may know, in a letter we recently sent to you we have borrowed from the city of Los Angeles the director of housing, Gary Squire, on an Intergovernmental Personnel Act, a loan, if you will, from the city to oversee this effort.

It is our intent as a Department to publish guidelines in the Federal Register on July 1. We expect, in implementing the demonstration, to use third parties, yes, but not exclusively third parties. We believe that there are other tools the Department needs to look at in terms of some of the portfolios we have that are amenable to mark-to-market.

For example, we are now talking with some State housing finance agencies because, again as the staff proposal points out, there are some that have the capacity and interest, and we think they may also be appropriate partners in this effort.

### NEED FOR TAX REFORM

Senator BOND. I appreciate very much your commenting on that. Just to lay it out for everybody who is interested, what the Senate staff is working on, and we hope to have a final draft scored by CBO next week and available for public and HUD comment. We do look forward to working closely with you. This has got to be a work in progress.

Specifically, I would like your opinion, the Department's opinion, on the need for tax reform for these properties or whether a mark-to-market proposal can be successful without explicit tax reform. It seems under what the Senate staff is working on at this point mark-to-market is a bifurcated mortgage, with a first mortgage set at the market, with a soft second mortgage.

But part of the proposal, as you indicated, is to get experts like State housing finance agencies to do the workouts with HUD as a backstop to ensure that the Federal dollars are not being wasted in subsidy layering. So we need your help on that, and if it works then you can help explain it to me, OK.

Mr. RETSINAS. The question had to do with tax reform. We believe that certain surgical tax relief policies can make the restructuring that we all believe is necessary more likely to happen and more efficient over time. The administration's position is we are prepared to work with the committees on formulating a tax relief plan that will be targeted to restructured proposals.

While we intend to proceed with the demonstration and not hold our breath waiting for a tax reform policy, because I do not underestimate the creativity of tax attorneys in trying to undertake demonstration projects, I do believe that an appropriately targeted tax relief policy would make more likely and more efficient the restructuring that is inevitably necessary in these developments. And we are prepared to work with you to see if we can make that as tactical and as focused as possible.

## PRESERVATION PROGRAM

Senator BOND. Thank you, Nic. And I might say thanks for your kind comments on KNHN in Kansas City on Monday morning. We do business early in the morning out there.

Mr. Secretary, and I guess this may involve others as well, I want to talk just a minute to conclude about the Preservation Program, the disposition of the 20-year-old section 236, 221(d)(3) projects. They are eligible for prepayment and removal from the low-income housing inventory. Last year I guess we appropriated a total of $624 million within the context of a revamped program which prioritized capital grants to nonprofit purchasers in exchange for easements dedicating these properties to low-income housing.

I gather that the program is progressing successfully, but with the amount of funding there will be a lot of projects they will not get to. Is it correct that the Department is recommending that the program be terminated and the remaining affected residents simply be given vouchers upon displacement?

Mr. RETSINAS. We are not recommending in the fiscal year 1997 budget additional funds for preservation, that is correct, Senator. We are proposing as part of our appropriation sufficient voucher authority and certificate authority to deal with those residents in those projects where there is prepayment and where there is a substantial increase in rents.

You are also right to observe, Senator, that if tax reform is complex, preservation is incredibly so. But the bottom line is a very simple one, and you point it out. We estimate it would take almost $4 billion to fully fund the preservation pipeline. With the money previously appropriated and with the $624 million appropriated in fiscal year 1996, we will fall short of the $4 billion.

That is why we indeed, as you suggested and required us to do, will prioritize those preservation activities that involve sales to nonprofits with capital grants that are endorsed by the residents. We think that is the best place to focus limited resources.

Senator BOND. Well, obviously what we are worried about is the Department estimated that they are going to need about 8,200 vouchers, 8,200 families will need section 8 subsidy contracts. These are going to be for 1 year. If the renewal appropriation is not increased, we have got a squeeze there.

Is it the Department's position that it is always more cost effective to utilize tenant-based rental subsidies in all situations?

Mr. RETSINAS. Not in all situations, but generally speaking we believe that over time having tenant-based assistance is less costly.

Senator BOND. All right. Mr. Secretary, I know you have some commitments, and there are two areas I just want to leave you the questions for the record. One of them, I have some concerns about HUD regulating the business of property insurance in apparent contravention of the McCarran-Ferguson Act. I have asked and am waiting for information from the Department on that. I would like to know what States have inadequate laws and what HUD has attempted to do to work with the State regulators on those issues, if you would supply that for the record.

And then we would like a report on the status of the downsizing efforts, how the staff will be reduced this year, headquarters versus field, how HUD plans to address program administration and staff reorganization, what your plans are. Then we are concerned about the use of consultants during the downsizing efforts, if you have limitations, restrictions or guidelines for hiring consultants. We would like to know the current consultants and job descriptions. There have been several articles raising questions about particular consultants with somewhat of a, shall we say, a political profile who might have been retained, and we would like to know how you are going about that and how you are assuring that—you would not do something like that, would you?

Senator MIKULSKI. Me, no; and neither would have Jack Kemp, my pal.

Senator BOND. You would have been on him like—would you not?

Moving right along, I would just like to note——

Senator MIKULSKI. If you think there are tensions there——

Senator BOND. We would kind of like to know the guidelines and how you select the mayors to be consultants, and other people along the line. But I will submit that for the record.

Senator Mikulski.

Senator MIKULSKI. Mr. Chairman, I also have questions for the record. One whole section relates to my favorite topic, called Hollander Ridge. But I think we have really had a very, very good hearing, and I look forward to working with you on advancing our bill.

Senator BOND. I thank you again, Senator Mikulski, for your working relationship.

Mr. Secretary, as always you have been more than helpful and forthcoming.

Secretary CISNEROS. We will get you answers on all these.

## ADDITIONAL COMMITTEE QUESTIONS

Senator MIKULSKI. Now, is this where you were happy to spend your birthday? You want to say that again?

Secretary CISNEROS. My first wish.

Senator BOND. Senator Mikulski has agreed to lead us in the singing of "Happy Birthday" to you.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

## QUESTIONS SUBMITTED BY SENATOR BOND

### PUBLIC HOUSING UNIT TURNOVER

*Question.* In terms of increasing average resident income levels as a means of augmenting rent revenues, it is my understanding that normal turnover of units in public housing is only about 10 percent a year. Furthermore, the earned income levels of other remaining residents are not likely to increase dramatically, especially since 40–45 percent of them are elderly or disabled. Has the Department conducted surveys to assess the impact of local, State and Federal welfare reform proposals on public housing and assisted housing families?

Answer. The Department's position is that because the welfare reform proposals are so numerous and so varied at this point, it would be premature to undertake a meaningful study of potential impacts. HUD has discussed welfare reform with the Public Housing Authorities' (PHA's) associations, and with representatives from the Department of Health and Human Services and a few State agencies, but to date, those discussions have been relatively informal.

Normal turnover in public housing is about 15 percent, based on both historical trends and recent data in the automated Multifamily Tenant Characteristics System. Income levels for elderly and disabled resident families may increase due to increases in Social Security. For the foreseeable future, average resident income for families is not expected to increase significantly, and in fact, it may go down due to inflationary factors and welfare reform proposals.

We strongly believe that operating subsidies, even in the case of the best-managed PHA's, will continue to be essential for the foreseeable future, even though changes contained in the 1996 Continuing Resolution may decrease Agency dependence over a period of time. This would be due to future increases in the number of working families residing in HA developments both because (1) we expect many Housing Authorities to be giving preference to working families on their waiting lists and (2) we anticipate an increase in the number of current tenant families moving from welfare to work.

### SECTION 8 UNIT TURNOVER

*Question.* For fiscal year 1996, the Congress required that tenant-based Section 8 contracts, in which a resident moved out, be held for 3 months prior to reissuance to another eligible family. This delay has the effect of reducing outlays by deferring the utilization of amounts appropriated for such assistance. The House Subcommittee has recommended continuation of this delay through fiscal year 1997 for this very reason. What is the Department's position on this delay?

Answer. The Department opposes continuation of the delay because it causes severe and undue hardship for families on the waiting list, since there is no new incremental assistance. This frustrates Public Housing Authority (PHA) administration of the program. Some PHA waiting lists may be as long as 10 or more years. Most new funding for tenant-based assistance in fiscal year 1996 is being provided for families who are already assisted under a different program (e.g., families living in public housing projects being demolished or families living in Section 8 projects where the owner decides not to renew the project-based housing assistance contract). It is extremely difficult for PHA's to explain to these families, who have been on the PHA waiting for years, that they must continue to wait even though assistance is technically available.

In addition, PHA's are reimbursed for the costs of program administration based on the number of units under lease on the first day of each month. The delay in reissuance causes PHA's to lose administrative fees, and ultimately, depending on the turnover rate, may require them to lay-off PHA employees. The growing uncertainty of a steady flow of administrative income will have an adverse impact on program administration.

For example, the Department has been encouraging PHA's to take the initiative to terminate assistance to violent criminals and families engaging in drug activity. However, faced with the prospect of having to delay reissuance of any recaptured assistance, losing administrative income, and having to lay off more employees, PHA's are unlikely to direct resources to this effort.

*Question.* Because few housing activities result in immediate expenditures, the amount "saved" by the 3-month delay in reissuance of Section 8 assistance is equal to a $315 million cut in the public housing operating subsidy account or almost $3.8 billion of the appropriation for the CDBG program. Given these very daunting choices, has the Department considered recommending any alternatives to the House proposal?

Answer. While the Department continues to review the tenant-based Section 8 programs for potential savings, we do not anticipate identifying substantial savings that will not jeopardize the effectiveness and integrity of the program.

### PRESERVATION PROGRAM

*Question.* Last year the Congress enacted a preservation program to govern the disposition of 20-year old Section 236 and 221(d)(3) projects which were eligible for prepayment and removal from the low-income housing inventory. A total of $624 million was appropriated for this purpose, within the context of a revamped program which prioritized capital grants to non-profit purchasers in exchange for easements dedicating these properties to low-income family housing. While I understand that the fiscal year 1996 program is progressing successfully, it appears clear that a large number of projects will not be addressed with this increment of funding. I understand that the Department has recommended that the program be terminated and that the remaining affected residents simply be given vouchers upon their displacement. Is this correct? The Department's estimate of such displacement totals 8,200 families * * * which I understand that the House recommended for funding in their Section 8 appropriation. Do you feel that this estimate is adequate to address the potential displacement of current residents?

Answer. The amount required for potential displacement of current residents is dependent upon owner behavior and to what extent projects will prepay. The fiscal year 1997 request of 8,200 units is based upon 45,000 units prepaying over a 3-year period of which 20,500 units would have been receiving and will continue to receive Section 8 assistance.

The fiscal year 1997 estimate presumed that legislation approving the right to prepay would be effective on October 1, 1995. The Congress passed this legislation in April 1996. As a result, we are experiencing a delay in prepayments in fiscal year 1996 and believe that 17,000 units will be required for fiscal year 1997.

### REALITY OF BUDGET CONSTRAINTS

*Question.* Mr. Secretary, it often appears that many of us who deal with housing and community development issues, are in denial of the magnitude and ramifications of long-term budgetary constraints. It has been my experience that while there is a general understanding that cuts must be made to balance the Federal budget, almost no one thinks that cuts ought to be made in their program. In fact, the biggest concession I seem to be hearing is that if Congress provides localities maximum flexibility, just maybe these localities can make do with less than the full inflationary increase! Unfortunately, even a freeze represents more than likely will be available, let alone any adjustment over current expenditures levels. The Congressional budget resolution assumes a 4 percent general reduction in discretionary activities over the next 5 years * * * even the Administration's "rosy scenario" budget acknowledges a potential 3 percent reduction.

I would commend to you David Broder's column in Sunday's paper in which he analyzed the very creative explanations by several Administration officials as to why a "budget cut" doesn't necessarily mean a "cut budget." In this context, it is somewhat surprising to see the Administration's budget projections for HUD's discretionary spending indicating a 7.5 percent increase over the next 5 years! But if the assumed cuts in veterans programs and NASA and EPA are not going to happen, then the assumed increases for HUD simply will not happen.

Mr. Secretary, I want to commend you for your willingness to discuss the ramifications of such budgetary constraints, and consider policy changes to deal with these constraints. I understand that you cannot recommend program levels different from that contained in the President's budget, but if HUD outlays do not increase in the manner proposed, this Committee must propose priorities for the remaining spending levels. Do you agree, in allocating these scarce resources, that we should prioritize the avoidance of involuntary displacement of families from existing assisted and public housing?

Answer. Yes, the Department regards community stability and residents' responsibility as major goals in any scenario for the future of public and assisted housing. One of the most critical elements of resident empowerment and responsibility is making sure that our clients are able to make their own decisions about where to live. In support of that idea, the Department needs to make every effort to assure that Federal policies and budgetary decisions do not result in the involuntary displacement of the very families that we are charged to serve. We need to be absolutely sure that Federal policies do not result in making currently assisted families homeless.

Unfortunately, in seeking to assure that our current clients are not adversely affected by policy and/or budgetary impacts, we have to accept that placing a firm priority on maintaining assistance to current clients may severely constrain the Federal Government's capacity to assist in meeting the needs of additional eligible families. As you have observed, HUD-assisted housing is presently able to reach only about one-third of the eligible population, and in the absence of additional new-unit funding, an absolute priority in favor of preservation of existing stock and current clientele probably means that few or no additional families will be able to obtain much-needed housing assistance.

Even acknowledging the probability of extremely limited new-unit funding in the short-term future, preservation of existing communities and maintenance of assistance will require full funding of operating subsidies budget to keep the current stock viable. It will also require full funding of the modernization budget, both to arrest normal deterioration and to maintain the housing authorities' efforts to catch up on deferred maintenance that has accumulated in recent years.

In addition, protecting client families against involuntary displacement also means funding for renewal of expiring Section 8 housing assistance contracts, as well as funding for replacement Section 8 certificates and/or vouchers to accommodate families that will inevitably be affected by HUD's and PHAs' efforts to transform public housing by destroying buildings or projects that are no longer livable. These include buildings or projects that have out-lived their usefulness or are already deteriorated beyond any likelihood of restoration, and projects that require reductions in density in order to meet the challenge of providing decent homes and suitable living environments for resident families. We expect to approve PHA proposals for demolition of up to 70,000 units in these categories from fiscal year 1996 to fiscal year 2000, and up to a quarter of those units may be occupied currently. We need to be able to assure that PHA's and families faced with this anticipated loss of specific units are protected against an absolute loss of housing assistance resources.

*Question.* Since we currently provide housing assistance to only about a third of those families who are in need, and probably will be even less capable of meeting those needs in the future, do you feel that we should continue to prioritize assistance to those families that are most desperately poor and most in need, even at the expense of imposing even more severe limitations on our ability to offer assistance to families whose need is not as desperate and may be temporary?

Answer. We recognize that there is a tremendous need for housing assistance for the very lowest-income families, but public housing cannot be expected to meet that need alone. One of the things that we have learned over the past 12 years is that the Federal Government has probably over-emphasized public housing admissions policies that favor the very neediest applicants. For example, there are statutory limitations on the number of admissions for families with incomes over 50 percent of local median, and an absolute preference for families who are paying more than 50 percent of income for rent. By promulgating and enforcing these policies, we have created unhealthy concentrations of desperately poor people, resulting in serious problems for our client families and management problems for the PHA's, and we have risked discrediting a housing assistance program that, for 60 years, has helped communities to provide decent, safe, and sanitary places to live for low-income families and senior citizens.

Both research and empirical, on-site observation teach us that viable communities or neighborhoods require at least a limited mix of income levels. Public housing communities are no exception. The Department favors policies that permit—even encourage—the presence of slightly higher-income, wage earning families in public housing. In addition to the social benefits of economic diversity in public housing communities, it is necessary to note that the inclusion of higher-income residents in public housing can and will result in reduced operating subsidy costs. A very-low-income tenant body means that PHA's will have very low rent revenues. The difference between the very-low formula rents and the approved budgeted operating costs must necessarily be made up in operating subsidies. If tenant incomes increase, however slightly, budgeted rent revenues will increase commensurately, and the level of eligibility for operating subsidy will decrease.

The Department must also note that there is a large and irrefutable need for housing assistance for families and individuals at the very lowest income levels. Our position in Public and Assisted Housing is that at least part of that need can and should be addressed by the Section 8 tenant-based assistance programs. By their nature, the Section 8 certificate and voucher programs enable low- and very-low-income participants to use Federal housing assistance resources in communities of their own choosing, including neighborhoods away from concentrations of the very lowest income populations. For this reason, we support income-targeting policies that encourage tenant-based Section 8 assistance.

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## QUESTIONS SUBMITTED BY SENATOR LEAHY

### CAMPUS OF LEARNERS

*Question.* You discussed the Campus of Learners program at the hearing. I support your drive to put public housing on the information highway. Teaching public housing residents to use computer technology and providing them with the necessary equipment can only help get them into good paying jobs and out of assisted housing. However, I was disappointed with the process used for determining Campus of Learners sites. I know that some public housing owners in Vermont are doing many of the things the Campus program promotes—establishing partnerships with local schools, giving residents access to computer technology, and helping them with job training activities. Unfortunately, those public housing associations in the state that were interested in the program and building on their own initiatives did not feel that they were given the time or the information they needed to make the decision to participate and complete an application. Will HUD continue to accept interested housing authorities as Campuses of Learning in 1997?

Answer. Yes, following the designation, implementation, and the evaluation of the 1996 Campus of Learners designees, HUD will look to build and improve on this Campus of Learners endeavor for other interested housing authorities in 1997.

*Question.* Will public housing authorities and other interested parties such as schools or community technology centers be given ample notification, through the Federal Register and whatever other means HUD considers appropriate, of any future opportunities to apply to the Campus of Learners program? This notification should include specific details about what funding HUD is committing, what other benefits organizations can expect from the program, and who to contact for additional information.

Answer. Yes, HUD will provide ample notification for any and all future opportunities to apply to the Campus of Learners program. This will include notification through the Federal Register. Additionally, future notification will be comprehensive and succinct in delineating the specific benefits of the Campus of Learners program, including Technical Assistance and other leveraging benefits that organizations may gain from the Campus of Learners designation. A specific example of "other leveraging benefits" can be coordination, integration and consolidation of the U.S. Department of Education technology challenge grants; U.S. Department of Labor—youth, adult and displaced worker employment and training efforts; job search and job placement; and other program priorities to maximize the goals of Campus of Learners. Lastly, a contact person is always included in all our Federal Register notifications.

*Question.* Are there other benefits that HUD can offer to housing authorities that do not feel ready for a full Campus of Learners designation, but are providing computer access and education and job training linkages for residents?

Answer. Yes, HUD will continue in its efforts to make available other benefits and resources to housing authorities. On August 14, 1996, HUD published a Notice of Funding Availability (NOFA) in the Federal Register announcing $30.8 million that will be awarded to housing authorities that develop programs that assist residents in achieving economic self-sufficiency. Under this Economic Development/Supportive Service NOFA, housing authorities must apply with partners and can develop programs that include educational training, job search assistance, assistance related to retaining employment, vocational and entrepreneurship development and support programs, transportation, and child care. Proposals are due October 15, 1996. A program that included computer access and education and job training linkages would certainly be eligible under this NOFA.

Another avenue for PHA's is the Urban Revitalization or HOPE VI program. HOPE VI is a program which stresses not only the revitalization of a targeted development within the PHA's inventory, but the empowering of residents so that they can move up and out of public housing. The fiscal year 1997 HOPE VI NOFA includes the creation or continuation of strong resident "Self-Sufficiency" programs as a factor to be considered during the review and scoring of applications. Through HOPE VI, the Department is encouraging PHA's to develop, as part of their overall revitalization plan, comprehensive resident support systems that could include access to computers, education and job training. Several existing HOPE VI grantees have already begun similar educational programs. Grantees are allowed to spend up to 20 percent of their grants on self-sufficiency programs, with the remaining 80 percent to fund the physical renewal of the target development.

### SECTION 8 PROGRAM

*Question.* Like other members of the subcommittee, I am very concerned about the future of the Section 8 program. With the cost of the program expected to balloon in the next few years, low-income families with Section 8 assistance and property owners using the program are at risk of losing housing assistance. Already program recipients are facing a year by year renewal of contracts with the accompanying uncertainty. To make matters worse, Vermont Section 8 projects owners have been informed by HUD's Manchester Office that they must inform residents one year in advance of a possible contract cancellation. The result is that every year residents of affordable housing many of them disabled or elderly, will be served notice of a possible eviction by years end. This system is destabilizing to residents and a disincentive to participation by owners, who may need more financial security than the Section 8 program now provides. How does HUD intend to return some level of security to the Section 8 Program while addressing long-term funding problems it faces?

Answer. The Department has begun to address the long-term funding problems of the Section 8 program while retaining some level of security in the program. HUD has worked diligently to craft a program for FHA insured properties which balances the needs of tenants and communities within the context of constrained budget resources. We believe our multifamily portfolio reengineering proposal provides a basis for residents in FHA insured properties to feel secure about future contract renewal funding problems. The portfolio reengineering proposal would reduce project-based subsidies to market rental rates for those properties with rents over market. Section 202 properties are not included in the portfolio reengineering proposal.

*Question.* Are owners with project-based Section 8 housing required to inform tenants one year in advance of a possible contract termination and, if so, what is the Department doing to adjust that regulation to the current situation of annual contract renewals?

Answer. The statute places responsibility on project owners for notifying tenants of expiring Section 8 assistance contracts. The Department did recognize that such notice could precipitate concern among affected residents, especially in the absence of assurances that assistance would be extended in kind at the expiration date. Therefore, HUD drafted language for owners to use in making the notification.

The letters sent to tenants a year in advance were intended to give them the best information available at the time of notification. Tenants living in projects for which HUD had the authority to enter into assistance contracts were informed that HUD and the owner may agree to renewal of the assistance prior to the impending expiration date, and that such agreement was contingent upon appropriations for the following fiscal year. All affected tenants were informed that HUD was committed to providing them housing certificates or vouchers should their contract not be extended for any reason.

The intent was to mitigate tenant concerns that they would no longer be assisted if HUD and the owner did not enter into an extension of the expiring contract. HUD will review the outstanding notification language to be sure that the potential for contract renewal is given appropriate emphasis.

*Question.* Finally, does Section 8 tenant-based assistance face similar requirements?

Answer. No. Sections 8(c) (9) and (10) of the U.S. Housing Act of 1937, require an owner participating in the Section 8 tenant-based program to give written notice to HUD and the family not less than 90 days before a termination of a tenant-based housing assistance payments (HAP) contract because of an expiration of the HAP contract. For the tenant-based program, "expiration" means (a) automatic termination of the HAP contract when 6 months have passed since the last HAP or (b) an HA determination, in accordance with HUD requirements, that the HAP contract must be terminated because there is insufficient funding under the consolidated annual contributions contract to support continued assistance for the family. (NOTE: Section 203(b) of the Omnibus Consolidated Rescissions and Appropriations Act of 1996, suspended the requirements of Section 8(c)(9) of the 1937 Act for fiscal year 1996. The legislation under consideration by Congress also will repeal this 90-day notice on a permanent basis).

The annual contributions process, HA budgeting procedures, and HUD procedures to renew expiring funding increments ensure that necessary funds are available for all units under HAP contract during an HA fiscal year. As long as these procedures remain in force, an HA would not determine that there is insufficient funding under the annual contributions contract to support continued assistance. That is, there would be no "expiration" of the HAP contract which would trigger the requirement for the 90-day owner notice of termination.

## PRESERVATION PROGRAM

*Question.* The Preservation program has come under a great deal of scrutiny in recent years for its high cost and perceived abuses by participating landlords. Last year Congress provided $624 million to address some of the LIHPRA applications in the pipeline, however many more Preservation projects will need to be addressed in the coming years than HUD has the resources to meet. HUD chose three states to test an innovative way to relieve HUD of its LIHPRA inventory while limiting the risk of displacing low-income families. This demonstration project allows Housing Finance Agencies to acquire housing projects in return for HUD writing off some portion of the projects' debt. The Vermont Housing Finance Agency was one of the organizations interested in participating in the program, which was not chosen. In fact no state representing the housing preservation programs facing rural areas was chosen. What is the potential of this proposal to address HUD's LIHPRA problem on a national scale?

Answer. HUD does not view the State Agency mortgage sale initiative as a means to solve LIHPRA Preservation problems. In fact, HUD did not chose the three states to test an innovative way to relieve HUD of its LIHPRA inventory. The purpose of the HFA Negotiated Mortgage Sales program is to sell subsidized mortgages on a negotiated basis to State HFA's. When we initially selected mortgages to sell to Pennsylvania, Missouri, and Maryland, we did not select Preservation eligible loans because, under legislation in effect at that time, owners would have lost their entitlement to preservation benefits (the mortgage would no longer be insured or held by the Department). It was not until new preservation legislation was passed that we put the preservation eligible loans back into the sales. The new legislation allows projects to be eligible for preservation benefits as long as the mortgage is under public ownership, which the mortgages will be as long as they are held by the State HFA.

It is important to point out that HFA's are not acquiring the housing projects. HUD is selling the mortgage loans, not the projects. The properties themselves will continue to be owned by the current owners.

HUD is not reducing the debt of the owners on the projects. We will, of course, sell the mortgages at a price which factors in the physical and financial condition and interest rate on the note, which will involve a discount to the HFA from the face value, but the owner's debt will remain the same. (The HFA may, of course, restructure the debt.)

*Question.* What are the estimated costs/benefits to HUD of using this method to address LIHPRA projects in the three states chosen for the demonstration and more broadly, to dispose of LIHPRA funded projects nationally, and what are the costs/benefits of the alternatives available to HUD.

Answer. As indicated above, HUD does not see this mortgage sales effort as a means to address LIHPRA projects.

*Question.* Does HUD intend to expand this demonstration project to include more states in fiscal year 1997, and if so, will rural housing projects be represented in that expanded program?

Answer. HUD does intend to expand the program. We will begin negotiations with Florida, Georgia, Illinois, and Massachusetts (the "backup States") in the near future. Rural housing projects will be represented to the extent that there are any such projects with subsidized, HUD-held mortgages located in those States. We should point out that all States were invited to early meetings on this program, and information on mortgage inventories in each state was provided. Many States had no interest, and as negotiations evolved, some had more capacity or the capacity to act faster than others, and were given priority on that basis.

### HUD'S TRANSFORMATION PLAN

*Question.* I am very interested in the Department's push for a "right-side up, community-first" cabinet agency. HUD cannot provide the flexibility local affordable housing providers need without an understanding of the unique problems facing those communities. That kind of understanding can only come from state based staff. The 1996 HUD reorganization plan titled "Renewing America's Communities From the Ground Up" describes HUD's proposed staff reorganization. Please send me a breakdown of HUD State offices, which includes the programs handled by those offices and identifies states with a state officer or director with comprehensive responsibility and/or familiarity with HUD programs. Senator Bond requested a report on the staff reorganization and downsizing at the hearing. I would be interested in receiving a copy of this report as well.

Answer. Attached is a current breakdown of HUD State offices, including the programs handled by those offices. A copy of the report, requested by Senator Bond, on HUD's staff reorganization and downsizing will be provided to you as soon as it becomes available.

STATE OFFICES

| State offices | State/area coordinator | Housing | Public housing | CPD | FHEO |
|---|---|---|---|---|---|
| New England area: | | | | | |
| Massachusetts | X | X | X | X | X |
| Maine | X | | | | |
| Vermont | X | | | | |
| Connecticut | X | X | X | X | |
| New Hampshire | X | X | X | X | |
| Rhode Island | X | X | X | | |
| New York/New Jersey area: | | | | | |
| New York | X | X | X | X | X |
| New Jersey | X | X | X | X | X |
| Mid-Atlantic area: | | | | | |
| Pennsylvania | X | X | X | X | X |
| Maryland | X | X | X | X | X |
| West Virginia | X | X | X | | |
| Virginia | X | X | X | X | X |
| District of Columbia | X | X | X | X | X |
| Delaware | X | | | | |
| Southeast/Caribbean area: | | | | | |
| Georgia | X | X | X | X | X |
| Alabama | X | X | X | X | X |
| Florida | X | X | X | X | X |
| South Carolina | X | X | X | X | X |
| North Carolina | X | X | X | X | X |
| Mississippi | X | X | X | X | X |
| Kentucky | X | X | X | X | X |
| Tennessee | X | X | X | | |
| Caribbean | X | X | X | X | X |
| Midwest area: | | | | | |
| Illinois | X | X | X | X | X |
| Ohio | X | X | X | X | X |
| Michigan | X | X | X | X | X |
| Indiana | X | X | X | X | X |
| Wisconsin | X | X | X | X | X |
| Minnesota | X | X | X | X | X |
| Southwest area: | | | | | |
| Texas | X | X | X | X | X |
| New Mexico | X | X | X | X | X |
| Arkansas | X | X | X | X | X |
| Louisiana | X | X | X | X | X |
| Oklahoma | X | X | X | X | X |

### STATE OFFICES—Continued

| State offices | State/area coordinator | Housing | Public housing | CPD | FHEO |
|---|---|---|---|---|---|
| Great Plains area: | | | | | |
| Kansas/Missouri | X | X | X | X | X |
| Iowa | X | X | X | .............. | X |
| Nebraska | X | X | X | X | X |
| Rocky Mountain area: | | | | | |
| Colorado | X | X | X | X | X |
| Wyoming | X | X | .............. | .............. | .............. |
| North Dakota | X | X | .............. | .............. | .............. |
| Montana | X | X | .............. | .............. | .............. |
| Utah | X | X | .............. | .............. | .............. |
| South Dakota | X | X | .............. | .............. | .............. |
| Pacific/Hawaii area: | | | | | |
| California | X | X | X | X | X |
| Hawaii | X | X | X | X | X |
| Arizona | X | X | X | .............. | .............. |
| Nevada | X | X | .............. | .............. | .............. |
| Northwest/Alaska area: | | | | | |
| Washington | X | X | X | X | X |
| Alaska | X | X | .............. | X | .............. |
| Idaho | X | X | .............. | .............. | .............. |
| Oregon | X | X | X | X | .............. |

X-Current Onsite Program Operations.

*Question.* Is it the Department's intention that each state will be assigned a "State Director" under this plan?

Answer. Yes. It is the Secretary's commitment to have a State Coordinator in each State. Each State Coordinator has familiarity with all of HUD programs.

*Question.* Does the Administration's budget request for fiscal year 1997 include adequate funding for a director in every state, and if not, what personnel reorganization is envisioned in the budget request?

Answer. Yes. The request included funding for a State coordinator in each state.

*Question.* The House VA/HUD subcommittee reduced HUD's administrative budget request. What effect would this reduction have on HUD's reorganization plans?

Answer. This would have a extremely adverse affect on HUD's Transformation Plan initiatives and would jeopardize much of what is being proposed under the Department's right-side up community-first model. As you know, this transformation is a significant and bold departure from the way we currently do business. If this transformation is to be completed successfully, we must change our organizational structure, the way in which we deliver our programs and the manner in which we provide customer service. It will require a significant dollar investment in technology, training, relocation of staff and buyouts.

### IMPACT OF MINIMUM RENT/BROOKE REPEAL

*Question.* The move to impose a minimum rent on public housing and Section 8 tenants has paralleled efforts in the public housing authorizing bill now moving toward conference to repeal the Brooke Amendment. Has the Department calculated the number of low-income families living in public or Section 8 housing that could be expected to lose their housing as a result of a $25 minimum rent and/or repeal of the Brooke Amendment?

Answer. The Department has not directly calculated the number of low-income families expected to lose their housing as a result of either a $25 minimum rent or repeal of the Brooke Amendment. The Department has estimated that about 127,000 non-elderly and non-disabled households would have to pay more rent if a $25 minimum were applied, and that such households might not receive exemptions due to hardship. There are 45,000 of these households, a majority of which are in the Puerto Rico Housing Authority, are currently in public housing and 82,000 are in Section 8 housing. The Department has not estimated what percentage of these households will leave assisted housing because of the increase in rents under application of a $25 minimum rent. Since repeal of the Brooke Amendment would have to be implemented by local decisions, the Department has not estimated either the number of households likely to have a marked increase in rents or the impact of rent increases on housing choices due to repeal of the Brooke Amendment.

### COMMUNITY DEVELOPMENT BLOCK GRANTS AND HOME GRANTS

*Question.* I have always been a strong supporter of the CDBG and HOME programs. I was very concerned by threats to reduce funding for these valuable programs in fiscal year 1996, and as I mentioned at the hearing, by the House's proposal to cut funding for CDBG by 10 percent in the Subcommittee. Last year also saw an increasing number of set-asides within the CDBG program. While these were all worthy programs which I support, the encroachment on the CDBG program concerns me very much. With continuing funding constraints and growing housing program costs, the pressure to push more and more programs under the CDBG umbrella can be expected to increase. Will the Department oppose attempts to further earmark the CDBG program with set-asides for other HUD programs?

Answer. Yes, the Department is very concerned that funds for existing and new programs are earmarked within the CDBG appropriation. For example, the 1996 appropriation doubled the amount of set-asides over that in 1995, thus reducing CDBG funds available to entitlement cities and States by more than 2.5 percent. The Department is committed to maintaining the CDBG program for the purposes for which it was created and will, therefore, oppose attempts to further use this appropriation to fund other activities.

*Question.* Will the Department preserve the CDBG program without additional set-asides in its future budget requests to Congress?

Answer. The Department will preserve the CDBG program to the maximum extent possible. Our 1997 proposal eliminated most of the non-related set-asides that were in the 1996 Bill. The total amount for set-asides in our 1997 Budget is $184.5 million, which includes an increase for the Native American CDBG program and $40 million for Youthbuild, and is still less than the set-asides in the enacted 1996 Budget.

*Question.* Will the Department continue to support HOME and CDBG as two separate programs addressing different needs in our nation's communities?

Answer. Yes. The Department supports two separate programs because of their different purposes. The goals of each program—affordable housing for HOME, and community revitalization that benefits low- and moderate-income persons for CDBG—are best achieved by continuing separate delivery systems.

CDBG funds address a broad range of community and economic development needs. States and localities may use their CDBG funds for housing, but there is no requirement that they do so. Communities can opt to avoid spending their money on housing when it is controversial, even though the need for affordable housing may be great.

Although CDBG recipients spend in the aggregate around 30 percent of their funds on housing, these expenditures are made principally to help existing homeowners rehabilitate their homes. HOME is used primarily for rental housing (58 percent of the funds), and to assist new homebuyers (21 percent of the funds). Rental housing and tenant-based rental assistance in HOME serve very low-income households, with over 91 percent of the households assisted with rental housing being 50 percent of median income or less. Rental housing and tenant-based rental assistance in HOME also serve populations with special needs.

If CDBG and HOME were to be merged, these same pressures to fund existing homeowners and other politically popular and needed community development projects would make it difficult for States and localities to use the merged programs to address the housing needs of extremely low-income families, or those with special needs.

The Department has increased the coordination between the two programs through the Consolidated Plan. Many States and communities have found that the two programs complement each other and are now working very effectively together.

There is substantial merit in maintaining the existing delivery systems with which community leaders, program administrators, nonprofit organizations, developers, and others involved in delivery of housing and community development resources are familiar. Changing the delivery systems by merging the two programs would be disruptive and costly, and most likely would reduce the production of affordable housing for very low-income households and for those with special needs.

### EMPOWERMENT ZONES AND ENTERPRISE COMMUNITIES

*Question.* At the hearing, Senator Mikulski asked for a performance evaluation of existing Empowerment Zones and Enterprise Communities to determine how the program is working before considering a new round of awards. I would be very interested in seeing this performance review as well. Also, I know that the Enterprise Communities and Empowerment Zones would be interested in seeing this kind of analysis as well to compare their progress with that of other communities. I would hope that the information would be made available on the EZ/EC Web Site or some other forum easily accessible to EZ/EC's.

Answer. The EZ/EC regulations require periodic reports to identify the community, local government, and State actions that have been taken in accordance with the strategic plan (24 CFR 587.400). The regulations indicate that HUD "will regularly evaluate the progress of the strategic plan in each designated urban Empowerment Zone and Enterprise Community on the basis of performance reviews to be conducted on-site and other information submitted" (24 CFR 597.401).

HUD has devised a three-phase performance system: a self-assessment Performance Review designed for the EZ/EC's to measure their performance against the benchmarks and goals communities set for themselves in their strategic plans; a rigorous, academic assessment of performance being conducted by The Rockefeller Institute and a consortium of education institutions to cover the first 5 years of the designation period; and a long-term 10-year impact evaluation of the EZ/EC program being undertaken by HUD's Office of Policy Development and Research.

The Self-Assessment Performance Review provides local self-measurement and Federal oversight of the designees' efforts to implement the benchmarks and goals in their strategic plans. HUD's continuation of the EZ/EC designation is impacted by the results assessed from the required semi-annual and annual performance reports. The requirements for the initial semi-annual reports were sent to designees on May 7, 1996, with a June 14, 1996, submission deadline. The reports will cover the period from designation, December 21, 1994, through April 30, 1996. As results are compiled, they will be made available to a broad spectrum of users, including designees, in written and electronic form.

The Rockefeller Institute of Government is in the process of completing a performance review of the EZ/EC Program. The review will: (a) undertake on-site visits of 18 zones and communities; (b) develop a data base of program information from benchmark forms and reports on progress filed with HUD; (c) analyze a geographic information system; and (d) determine best practices and models. There will be a series of reports issued for the first 5 years of the EZ/EC program, with the first report available to the public at the end of this year. These reports are designed to provide information useful to Washington policy makers, and to the communities themselves.

The information derived from the self-assessment and Rockefeller performance reviews will provide timely and thoughtful feedback to those members of the community involved in the day-to-day challenges of inner city revitalization. The report results are intended to provide a vehicle for sharing specific project successes across communities. Conversely, it will permit "mid-course" corrections at the Federal and local levels, where a particular approach is falling short of the expectations set by the community.

The performance reports will measure how the "bottoms-up" initiatives set by the 72 laboratories designated as urban Empowerment Zones and Enterprise Communities are effectively supporting the unique goals and objectives in their strategic plans and performance benchmarks.

The long-term evaluation study will not provide short-term performance information. It will evaluate the long-term impacts of the EZ/EC program. While there will be a 5-year interim report prepared, the Rockefeller reports will provide the near-term information on the capacity of designees to implement their strategic plans and achieve the benchmarks and goals of the program.

HUD will provide Congress with all of the information that is prepared on the status of the EZ/EC program from the semi-annual reports currently being submitted and the Rockefeller performance studies. Likewise, the information will be accessible to the designated EZ/EC's, Congress and the public on the HUD Web Site and in writing.

The provision of information to the EZ/EC designees has been operational since designation. They have been provided access to an unparalleled system of information about Federal and private initiatives available to support their strategic plans. These tools include:

- —EZ Flash—Published once or twice per week and faxed to community development professionals and EZ/EC residents throughout the country. EZ Flash provides updates on the program, the latest information on Federal funding opportunities, and news from the communities.
- —EZ/EC Newsletter—Published quarterly, the newsletter contains information about best practices in EZ/EC communities, program information, and useful updates on EZ activities.

—EZ/EC Satellite Network—Periodic video conferences permit EZ/EC residents from around the country to participate in discussions about Federal and private programs in support of EZ/EC's. Past sessions have included a seminar on supermarket development in inner cities and a multi-agency presentation on Federal economic development programs.

—EZ/EC and HUD Homepage—These sites (www.ezec.gov and www.hud.gov, respectively) contain a wealth of information about the program, the communities, and community and economic development resources.

—Periodic Workshops—Workshops provide an excellent opportunity for Empowerment Zones and Enterprise Communities to share information, sharpen skills, and dialogue with the Federal government. Three training sessions have been held in Washington, and a series of regional sessions have provided technical assistance throughout the country.

### LEAD-BASED PAINT PREVENTION

*Question.* Another matter brought up at the hearing was the EPA lead paint rule. As you know, lead paint contamination is a serious problem in Vermont. I would be very interested in hearing what feedback you have gotten from states and individuals affected by the rule.

Answer. As you can see from the attached news clippings, the response to the new lead disclosure rule has been overwhelmingly positive from both the housing/real estate industry and the health advocacy community. HUD and EPA, in a public/private partnership with the National Association of Realtors (NAR), have jointly funded the distribution of over 750,000 lead hazard information pamphlets across the country. These pamphlets, required by Title X, are intended to educate parents and caregivers on how to protect their children from lead poisoning.

Since the rule's publication on March 6, 1996, HUD's Office of Lead Hazard Control has averaged about ten phone calls per day regarding the new lead disclosure requirements. In general, callers have been requesting more information on the rule's requirements and its applicability.

Both HUD and EPA have undertaken education and outreach efforts to inform the public about recent changes in Federal lead-poisoning prevention policies. Under a grant from HUD, the Alliance to End Childhood Lead Poisoning is providing education and technical assistance to States that wish to implement the recommendations of the Title X Task Force on Lead-Based Paint Hazard Reduction and Financing (issued July 1995), as they apply to private rental properties. The Alliance is also providing education and outreach to States, in order to help implement the 1018 lead disclosure rule under a grant from the U.S. Environmental Protection Agency (EPA).

In recent months, the Alliance has provided technical assistance for implementing both the Task Force recommendations and the lead disclosure rule to the State of Vermont. After conducting two workshops on lead-poisoning prevention initiatives for the New England States (February and May, 1996), the Alliance reported that the response from State officials was generally positive regarding the importance of the lead disclosure rule (though most were eager for more information to provide to residents and property owners, and for technical assistance to implement the rule). In response, the Alliance has been providing technical assistance to the Vermont Department of Health to develop a training program for maintenance workers and property owners of pre-1978 housing on Essential Maintenance Practices that will help reduce potential lead hazards in rental properties. This action resulted from the recent enactment of Vermont House Bill 778, "An Act to Prevent Lead Poisoning in Children in Rental Housing and Child Care Facilities," which became effective on July 1, 1996. The Alliance has also developed an informational slide show on the new lead disclosure rule, a copy of which was sent to Vermont health officials in July.

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[From the USA Today, Mar. 6, 1996]

### RENTERS, BUYERS TO GET LEAD ALERTS

(By Anita Manning)

Owners of houses or apartments built before 1978 will be required to notify renters or buyers of known lead-based paint hazards on the property, say new rules released today by two federal agencies.

The regulations, announced by the U.S. Department of Housing and Urban Development and the Environmental Protection Agency, take effect Sept. 6 for owners of more than four dwellings, and Dec. 6 for owners of four or fewer.

"It's unacceptable that millions of American children are exposed to the risk of lead poisoning every day," says HUD Secretary Henry G. Cisneros. "This effort is a smart step that will make a big difference in protecting families from the dangers of lead."

While blood lead levels in children have declined since the mid-1970's, about 1.7 million children are known to have lead levels in blood that exceed safe limits. These cases are thought to be due primarily to exposure to lead-based paint, HUD says. Blood poisoning can cause reduced intelligence, shortened attention spans, hyperactivity, behavior problems and reading disabilities.

At greatest risk are urban, low-income minority children. The EPA estimates 1 in 5 children in poor minority families have elevated blood lead levels. Children can be exposed to lead in peeling paint or dust from home renovations.

The new HUD/EPA rules say before ratifying a contract for sale or lease of a home built before 1978:

—Sellers and landlords must inform buyers and tenants of known lead-based paint hazards and any reports of testing or risk assessment that may have been done.

—They must give buyers and renters a pamphlet, produced by EPA, HUD and the Consumer Product Safety Commission, on how to protect families from lead in homes.

—Home buyers have an optional 10 days to conduct a lead-based paint inspection at their own expense.

—Sales contracts and leases must include provisions that ensure disclosure and notification actually take place.

—Responsibility for compliance with the rule rests with sellers, landlords and real estate agents.

The rules will apply to about 64 million buildings, HUD estimates. Lead was outlawed in household paint in 1979.

Not covered are dwellings unlikely to house children, including efficiencies, dormitories, short-term rentals and homes for the elderly. Also not covered are houses being sold because of foreclosure and homes designed for disabled people, unless children live there.

Copies of the information pamphlet are available from the National Lead Information Center, 800–424–5323. Deaf and hard of hearing people can call via TDD, 800–526–5456.

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[From the Washington Post, Mar. 16, 1996]

## SELLERS, LANDLORDS TO DISCLOSE LEAD PAINT—RULES GIVE BUYERS 10 DAYS TO TEST FOR HAZARD

(By Kenneth Lelen)

The federal government has told home sellers and landlords that by later this year they must start telling buyers and renters what they know about lead paint hazards in their properties.

In the case of sales, the government said buyers then must be given a 10-day period prior to settlement to test a property for lead paint hazards in the same manner that many transactions now allow inspections for structural condition, radon exposure or termite infestation.

Under the rules published earlier this month, sellers and landlords, along with sales agents and rental brokers, also must offer disclosure forms and pamphlets written by the Department of Housing and Urban Development and the Environmental Protection Agency that tell people how to protect themselves from lead paint hazards.

Highly toxic to humans, especially children, lead can damage the nervous system, kidneys, reproductive organs and mental development. An estimated 10 percent of U.S. preschoolers suffer from high enough levels of lead in their blood to poison their systems, according to the Centers for Disease Control.

The new rules, mandated by the Residential Lead-Based Paint Hazard Reduction Act of 1992, take effect on Sept. 6 for owners of properties with four or more dwelling units and on Dec. 6 for all other property owners and agents.

The new rules do not come as a surprise to the real estate industry. Sample pamphlets and disclosure forms have been widely circulated to industry groups by HUD and EPA, said Lee White, legislative representative for the National Association of Realtors.

"We're pleased with the final result and don't think deals will come crashing down when Realtors start handing out these pamphlets," he said. "I think buyers and sellers will deal with the issue [of lead paint hazards] in contingency language. I also think lead testing will ultimately be part of the house inspection process we already see."

Federal officials acknowledged that while their aim is to educate residents about the dangers of lead paint in older homes, especially the 64 million units built prior to 1978, when lead paint was outlawed, the new rules may trigger an increased number of lead paint inspections and abatement projects, both costly tasks.

"I don't want to downplay the fact that once people are aware of it, they will want to inspect for lead paint hazards," said Charles Franklin, project manager in the EPA's Office of Pollution Prevention and Toxics. "However, there is no necessity to engage in expensive repairs, since simple precautions and common sense can have a significant impact on the potential for lead-based paint hazards in the home."

While lead paint test kits are widely available, few buyers request their deployment on house inspections, said Rockville building inspector Sue Perrine.

"We don't offer lead testing at this time, since there hasn't been a demand," said Perrine, a HouseMaster of America franchisee. "We've decided to wait and see if there was a clamoring for it, since people are very cost-conscious today."

The cost of a single-family home inspection averages $220 in Montgomery County, while a radon test, which is requested in about 10 percent of inspections, costs another $130, according to Perrine.

The cost of lead paint testing, which requires state certification of contractors, inspector training and use of complicated equipment, ranges from $200 to $450 per housing unit, lead industry experts said. Lead cleanup and control measures cost homeowners from $500 to $600, while full-fledged abatement projects, which entail removal and replacement of building elements, can cost from $10,000 to $15,000 per unit. Often, the problem can be solved simply by leaving the lead paint intact, or taking limited steps to minimize the danger.

"The fact the people will be given more information on lead paint may lead to more inspections," Perrine said. "But I doubt they are concerned enough to add the hefty cost of a lead paint test to their inspection."

But Mark Mitchell, president of U.S. Lead's Pro-Tect Lead Testing Services, an Oyster Bay, N.Y., firm that sells franchised lead paint inspection services, thinks otherwise.

"Title X is a turbocharger for this [testing] business, which we expect will grow faster and better," said Mitchell, whose franchisees do not perform abatement work.

Mitchell said the market for his firm's services will expand quickly as people realize the risk of lead paint poisoning and concomitant need for testing. In addition, testing will not be confined to inner-city areas or low-income households, since suburban and middle-class homeowners are often subject to the risk of lead poisoning due to their many repair and renovation projects, he said.

"We also expect buyers to conduct tests before they negotiate price reductions or lead paint removal," he said. "When these people go to sell their house at a later time, they will want to present their testing and negotiate against price reductions."

Abatement contractors expect business will increase as a result of Title X's implementation, said Pittsburgh consultant John Zilka, president of the National Lead Abatement Council.

"Most people do not have lead-based paint testing now because they don't know the size of the risk," he said. "We contend that if the real estate agents do a good job of disclosure, it could lead to more testing and abatement work."

Does the widespread release of data about the hazards of lead paint and possible need for testing constitute a scare tactic by the lead abatement industry? Zilka said no.

"Scrupulous contractors will inform homeowners of their options," he said. "They will know the ability to control the hazard has to match a homeowner's pocketbook."

Even painting contractors expect to benefit from consumer exposure to lead paint disclosure rules, said Marc Freedman, a spokesman for the Painting & Decorating Contractors of America, a Fairfax group with 3,000 members nationwide.

"I have heard some painting contractors are thinking about going into lead paint inspection," Freedman said.

"However, I hope people don't jump to the conclusion that they need to remove lead paint if they find it," he said. "Abatement can be more costly and raise more problems than leaving it intact. Like asbestos, we're better off leaving it intact."

For pamphlets, disclosure forms and answers to questions on preventing lead poisoning, call the National Lead Information Center at 1–800–424–5323.

[From the Pittsburgh Post-Gazette, Mar. 7, 1996]

## FOE OF LEAD DOESN'T LIKE PAINT RULES

(By Steve Twedt)

Federal officials announced new rules yesterday to protect children from lead poisoning by requiring sellers and landlords to disclose any known lead-based paint in their dwellings.

They must also provide a pamphlet to the new buyers and renters that will describe how they can protect family members from lead poisoning. The rules were announced jointly by the U.S. Department of Housing and Urban Development and the Environmental Protection Agency.

But the rules stop short of requiring property owners to test their dwellings for lead paint or pay for its removal.

"It's like cigarette labeling," said Dr. Herbert Needleman of the University of Pittsburgh, the pioneering researcher who linked development problems in children to even low levels of lead exposure.

It's good to know what the risk is, but it's also a way out for the landlord or the seller."

If, for example, a single woman with three children is told that the house she wants to buy has lead-based paint, "what's she going to do about it? They need that house, that's all they can afford and they can't clean it up," Needleman said.

"It places the onus on the consumer and very cheaply bails out HUD and the realtors."

The rules are meant to address the lead-paint threat in an estimated 64 million homes and apartments built before 1978.

More than 1.7 million American children have unsafe blood lead levels, largely due to ingestion of paint chips or dust. Although lead-based paint has not been sold since 1978, "unless you have completely stripped every painted surface on a property * * * it's probably got some lead in there," HUD spokesman Mike Zerega said.

Needleman's research has found problems ranging from lower IQ to higher school absenteeism to general anti-social behavior linked to lead poisoning.

The cost of removing lead from all U.S. dwellings is high, he said—$32 billion by one 1991 federal estimate. But he added that the savings in averted health costs and the need for special education programs had been estimated at $60 billion.

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[Denver Post, Mar. 7, 1996]

## HOME LEAD-BASED PAINT WARNING TO BE RULE

(By the Associated Press)

WASHINGTON—Beginning later this year, homeowners and landlords must inform buyers and tenants about the presence of lead-based paint, which has poisoned more than 1.7 million American children.

The government rules, announced yesterday, cover most public and private housing built before 1978, when lead was banned from household paint. The rules also give buyers 10 days to have homes inspected for lead before they close the deal.

"There is no reason why any child in this country today should experience lead poisoning. This is absolutely preventable," said Carol Browner, administrator of the Environmental Protection Agency, which issued the rules.

Inhaling or swallowing even tiny amounts of lead can cause brain damage, lifelong learning disabilities and behavioral problems for children under 6.

Children can be poisoned by inhaling dust generated during renovations, eating chips that may come from peeling paint, chewing on window frames or putting dust-covered hands into their mouths.

The EPA estimates that about 64 million homes—more than half in the nation—have lead-based paint in them.

In issuing the rules, officials explicitly rejected calls to require removal of lead-based paint.

Henry Cisneros, secretary of the Department of Housing and Urban Development, said the need to remove the danger must be balanced with the need to provide affordable housing.

[From the Boston Globe, Mar. 10, 1996]

## DPA TO REQUIRE LEAD-PAINT DANGER WARNING

(By Laura Meckler)

WASHINGTON—Beginning later this year, homeowners and landlords must inform buyers and tenants about the presence of lead-based paint, which has poisoned more than 1.7 million American children.

The government rules, announced Wednesday, cover most public and private housing built before 1978, when lead was banned from household paint. The rules also give buyers 10 days to have homes inspected for lead before they close the deal.

"There is no reason why any child in this country today should experience lead poisoning. This is absolutely preventable," said Carol M. Browner, administrator of the Environmental Protection Agency, which issued the rules.

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The EPA estimates that about 64 million homes—more than half in the nation—have lead-based paint in them.

In issuing the rules, officials explicitly rejected calls to require removal of lead-based paint.

Henry Cisneros, secretary of the Department of Housing and Urban Development, said the need to remove the danger must be balanced with the need to provide affordable housing.

"Simply adding a cost to every single transaction in the country is too gross a response to something that might require more discreet judgment," Cisneros said.

It makes more sense to let people shape their own solutions, he said.

For instance, some elderly couples might not care about lead-based paint and might not want to pay to have it removed.

"We are really out of an era where we can just declare a national solution to a problem this complex," he said.

Browner added that the EPA may issue more rules in the future.

In July, a national task force recommended a host of solutions, including allowing the landlords some protection from lawsuits if they remove the hazard.

It also suggested checking at least once a year for deteriorated paint in rental housing and doing prompt repairs.

The new rules take effect in September for owners of more than four units and in December for others.

Browner said she hopes they help lead inspections become as commonplace as inspections for roof damage or termites as people look for houses.

Under the rules, owners and landlords of pre-1978 housing must give residents any reports from lead testing already done and they must give them a pamphlet that explains how to control and abate lead hazards.

The rules are supported by the National Association of Realtors, and real estate agents are expected to do most of the enforcing, officials said.

Violators may face civil and criminal penalties, but Browner said the EPA does not anticipate using them unless someone is guilty of a pattern of abuse.

"This is really an effort to educate," she said.

Maurci Jackson, president of United Parents Against Lead, said the new rules will help people who know nothing about the dangers of paint. "It at least gives us a clue," she said. "Now we find out about the lead after our children are poisoned. It is very hard to prevent something when you don't know anything."

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[From the New York Times, Mar. 7, 1996]

## LEAD PAINT: NEW RULES ANNOUNCED

(By Matthew L. Wald)

WASHINGTON, March 6—Sixty-four million houses and apartments contain lead-based paint, the Department of Housing and Urban Development estimates, and that includes the great majority of those built before 1978. Researchers say many of the people who live in them have no idea of the hazards of sanding or stripping the paint, or even opening and closing doors and windows with surfaces that rub.

But Federal regulations published today will require sellers and landlords to give information to buyers and renters, disclosing what they know about a particular property, including the results of any lead tests in their possession. Landlords and sellers must also provide a pamphlet, developed by HUD and the Environmental Protection Agency in English and Spanish.

The regulations also guarantee buyers a 10-day period to test the house for lead, which will make lead similar to radon in the way it is handled in real estate transactions. A technician can test for lead by using an electronic device called an X-ray fluorescence gun, or paint chips can be sent to a laboratory. Depending on the paint's condition, the remedy can be to remove it, to cover it or leave it.

The Secretary of Housing, Henry G. Cisneros, said in a telephone interview yesterday that "the hope is that just getting awareness and information about the problem, people will do things that will keep lead problems from being exacerbated."

Mr. Cisneros, who pointed out that he has an 8-year-old son and owns an older house, added, "If I had been handed, when I bought my house, a brochure that said, 'This is the nature of the hazard, this is how it most frequently shows itself and here are the precautions,' I would have at least perused that and been conscious of it as we made refurbishments." The inspections, he said, could help "much the way people are made aware of the fact that a house may have a structural problem or a roof leak."

The new regulations were called for in a 1994 law governing disclosure of lead paint in real estate deals. The law is binding on real estate agents and rental brokers, along with landlords and sellers. The rules take effect on Sept. 6 for those with four or more houses or apartments, and on Dec. 6 for everyone else.

"The public has a right to know about toxic hazards in the community, and today's action expands that right," Carol M. Browner, the Administrator of the E.P.A., said in a statement.

The manufacture of lead-based paint was banned in 1978, but obviously that did not make the paint already on walls and woodwork go away. It's still there, and dangerous.

As researchers have found health damage from lower and lower doses of lead, the Federal Government has redefined the problem and now reports that more than 1.7 million children have unsafe blood levels of lead. There are sources besides paint, but since leaded gasoline has all but disappeared, the main source is paint.

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[From the Plain Dealer, Mar. 7, 1996]

## NEW RULES TO REQUIRE LEAD PAINT NOTIFICATION

(By the Associated Press)

WASINGTON—Beginning later this year, homeowners and landlords must inform buyers and tenants about the presence of lead-based paint, which has poisoned more than 1.7 million American children.

The government rules, announced yesterday, cover most public and private housing built before 1978, when lead was banned from household paint. The rules also give buyers 10 days to have homes inspected for lead before they close the deal.

"There is no reason why any child in this country today should experience lead poisoning. This is absolutely preventable," said Carol M. Browner, administrator of the Environmental Protection Agency, which issued the rules.

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In issuing the rules, officials explicitly rejected calls to require removal of lead-based paint.

Henry Cisneros, secretary of the Department of Housing and Urban Development, said the need to remove the danger must be balanced with the need to provide affordable housing.

"Simply adding a cost to every single transaction in the country is too gross a response to something that might require more discreet judgment," Cisneros said.

It makes more sense to let people shape their own solutions, he said. For instance, some elderly couples might not care about lead-based paint and might not want to pay to have it removed.

"We are really out of an era where we can just declare a national solution to a problem this complex," he said.

## CONCLUSION OF HEARINGS

Senator BOND. If there is no further business to come before the subcommittee, we will stand in recess.

[Whereupon, at 4:42 p.m., Tuesday, June 11, the hearings were concluded, and the subcommittee was recessed, to reconvene subject to the call of the Chair.]

# DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT AND INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1997

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
*Washington, DC.*

## NONDEPARTMENTAL WITNESSES

[CLERK'S NOTE.— A hearing for public witnesses could not be held, but the statements received will be made a part of the record.]

## PREPARED STATEMENT OF TERESA NASIF, DIRECTOR, CONSUMER INFORMATION CENTER

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to present this statement on the fiscal year 1997 budget request of the Consumer Information Center (CIC).

The fiscal year 1997 appropriation request of $2,060,000 will enable CIC to continue its role as the public's most accessible and most popular centralized source of federal consumer information. Established in 1970 by Executive Order and placed within the General Services Administration, CIC will build on its successful 25 year track record as the government's premier consumer education program. To date, Americans have ordered 285 million publications from CIC's famous Pueblo, Colorado address. No public or private sector program reaches as many citizens throughout the country as economically, effectively, and efficiently as CIC does.

Due in large measure to its independent status and the support of GSA, OMB, and the Senate and House Appropriations Subcommittees, CIC has forged a dynamic and vigorous nationwide program of tremendous benefit to the public. The CIC program is manifested in an extensive agency liaison network with more than 100 federal program offices, a media program used by thousands of writers and broadcasters, and print and electronic information dissemination activities that are unsurpassed in quality and effectiveness. CIC has met the challenge to change with the times and is dedicated to serving other federal agencies, the media, and the Congress, as well as the public.

As we move through the last years of the twentieth century, federal publishing and information programs are undergoing vast changes in program priorities and funding availability. Federal agencies need the most efficient and cost-effective ways to keep the public informed about basic health and safety issues, federal programs and benefits, and marketplace issues that affect citizens' everyday lives. Americans rightfully expect that government programs will operate effectively and that managers will economically use the resources entrusted to them.

Given these demanding realities, CIC is uniquely positioned among federal agencies to provide cost-effective information dissemination. Centralized distribution, which by its very nature features economies of scale and high volume, is less expensive than having many individual agencies handle their own distribution. In fiscal year 1995, CIC fulfilled its mission mandate by keeping publication distribution charges to federal agencies at an unbeatable average cost of 49 cents a copy. This overall amount includes postage, labor, storage, and all related costs. CIC studies show that there is no other entity in the federal or private sector which can fill orders for consumer publications nationwide at a comparable price.

CIC continually searches out new and even more cost-effective ways of responding to the public need for federal information. CIC's immediate as well as long-term objectives center around maintaining the vitality and usefulness of our traditional printed information dissemination programs, improving electronic information dissemination programs, and combining both programs to efficiently reach the entire nation.

With the support of this Committee to explore new technologies, during fiscal year 1995, CIC established a home page on the Internet's World Wide Web (http://www.pueblo.gsa.gov), and made substantial enhancements to the electronic Bulletin Board System (BBS). To date, the public has accessed CIC's electronic sites more than two million times. A number of sources have rated CIC's site one of the government's best and most useful. CIC makes the latest **Consumer Information Catalog** available electronically along with the full text of more than 200 listed publications. CIC also offers a wide variety of agency announcements, relevant **Federal Register** notices, product recall actions, upcoming consumer meetings, and electronic versions of valuable publications, including the **Consumer's Resource Handbook**, which are not provided by agencies in sufficient quantities for distribution by CIC.

CIC's responsive public education program is the most effective way to empower American consumers to become self-reliant and is in keeping with the ongoing drive to downsize government and to lessen the public's dependence on it. Empowering citizens through education to solve their own problems and to make their way in the marketplace remains the best strategy.

Now, more than ever, the full range of CIC's information services is needed. Our agency liaison program, our media and marketing programs, our nationwide publication distribution system, and our electronic information activities all combine to make the CIC an unequaled source for citizens desiring unbiased consumer information from their federal government. CIC looks forward to many more years of building on and enhancing these distinct operations which have served the public so well for more than 25 years.

Mr. Chairman, thank you for the privilege of presenting this written statement on the fiscal year 1997 budget request for CIC. We trust that the Committee will agree that the Consumer Information Center is making a significant contribution to the well-being and progress of our nation and that you will favorably review our request.

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## PREPARED STATEMENT OF KATHLEEN A. MC GINTY, CHAIR, COUNCIL ON ENVIRONMENTAL QUALITY, EXECUTIVE OFFICE OF THE PRESIDENT

Mr. Chairman, Senator Mikulski, Members of the Committee:

I am pleased to have this opportunity to submit testimony for the record on behalf of President Clinton's Fiscal Year 1997 budget request for the Council on Environmental Quality (CEQ) and the Office of Environmental Quality (OEQ). (Hereinafter collectively referred to as CEQ.) The President's request for funding is $2,436,000 and 19 full time equivalent (FTE) staff positions. The Fiscal Year 1997 funding request reflects the President's commitment to revitalizing CEQ so that the agency can be an active and constructive part of the Administration's overall effort to streamline federal programs, make government more efficient and effective, and ensure that federal decisions are based on sound social, economic and environmental information.

Established by the Congress in 1970, CEQ grew out of bipartisan traditions and a growing concern among the public about the state of the nation's environment. Under the National Environmental Policy Act (NEPA), CEQ works to balance environmental, economic and social objectives; advises and assists the President in the development of environmental policies and proposed legislation; identifies, assesses and reports on trends in environmental quality and recommends appropriate response strategies; reports annually to the President and the Congress on the state of the environment through the preparation of the annual Environmental Quality Report; provides support and leadership in the coordination of activities of the federal agencies and departments; fosters cooperation among federal, state and local governments, the private sector and citizens; interprets NEPA and the CEQ regulations; approves agency NEPA procedures and issues guidance to address systemic or localized problems; and oversees federal agency implementation of the environmental impact assessment process and mediates disputes regarding the adequacy of such assessments.

Over the past twenty-five years, much progress on the environment has been made in large part due to a bipartisan commitment to improve environmental protection and ensure both a healthy environment and a sound economy for future generations. We have made real progress in many areas; but sometimes, not without difficulty. Every step required us to balance our economic, environmental and social aspirations.

This challenge, never simple, is today more pressing and complex than ever before. Today it is time to move beyond balance and move toward an effective integration of our various objectives.

In a 1995 report commissioned by the Henry M. Jackson Foundation entitled CEQ Revisited: The Role of the Council on Environmental Quality, the author states: "It is the conclusion of this report that as the nation ends one century and begins another, the CEQ has never been more needed. The easy environmental problems are resolved. Now the more difficult business begins of seeing to it that governmental efforts produce results in an economically efficient manner and not just greater bureaucracy, waste and frustration."[1]

CEQ's status a policy office within the Executive Office of the President – centrally located but without line agency responsibilities – makes it uniquely suited to challenge old practices, offer new vision and ensure appropriate implementation of the President's policies.

Today, we request 19 Full Time Equivalent's (FTE's) and $2,436,000 for Fiscal Year 1997 for CEQ. This amount represents an increase of $248,000 over CEQ's Fiscal Year 1996 budget request. CEQ seeks to support the same level of FTEs that had been planned for Fiscal Year 1996.

This increase is a very small number when you compare it to other items in the federal budget. Nevertheless, any budget increase must be well justified and CEQ's Fiscal Year 1997 budget request is no exception. Our requested percentage increase may seem large even though the actual amount of money is so small because CEQ's base budget is itself so small. In fact, CEQ has the smallest individual account of any policy office in the Executive Office of the President. We are making this request because the President is committed to revitalizing CEQ. He believes it is appropriate to request this modest increase in resources in order to achieve substantial improvements in the agency's operations. This request remains below the level under which CEQ operated in the previous Administration.

In summary, the Fiscal Year 1997 budget request will help to ensure that CEQ fulfills the statutory requirements as laid out by the National Environmental Policy Act.

## ACCOMPLISHMENTS OF THE COUNCIL ON ENVIRONMENTAL QUALITY

In October 1994, the Vice President instructed CEQ to lead an effort to reinvent environmental regulation. The formal review began in December of that year, with CEQ directing a team that included the National Performance Review, the Office of Management and Budget, the Council of Economic Advisors, the Office of Science and Technology Policy, the National Economic Council, the Environmental Protection Agency and the Department of Justice. On March 16, 1995, the President and Vice President announced a package entitled "Reinventing Environmental Regulation." The package includes a series of recommendations which focus on increasing efficiency in the federal government's regulatory and enforcement policies, including: increasing the use of market mechanisms in air and water quality policy; refocusing the Resource Conservation and Recovery Act (RCRA) on high-risk wastes; calling for a 25 percent reduction in paperwork; establishing Compliance Assistance Centers to support small businesses in complying with environmental regulations; and giving small businesses a 180 day grace period wherein no penalties will be imposed if they work with EPA in partnership to remedy violations.

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[1] CEQ Revisited: The Role of the Council on Environmental Quality by Boyd Gibbons, Prepared for the Henry M. Jackson Foundation (1995).

A particularly innovative component of the reinvention package is Project XL. Through Project XL companies are invited to develop their own strategies to meet environmental challenges. Significant new flexibility is offered under this Project and innovation is encouraged. This initiative responds to, and rewards, the leadership of many responsible companies willing to exceed current statutory and regulatory requirements if we can create the flexibility necessary to achieve environmental protection in the most efficient and effective manner. CEQ is now leading a multi-stakeholder process to see if the principles of XL can be developed into alternative compliance legislation that will receive bipartisan support.

CEQ also plays a central role in support of Congressional legislative inquiries concerning the environment -- particularly in areas in which agencies may have divergent views. As part of this role, CEQ attempts to ensure the Congress has the information it requires to make sound policy decisions. For example, and in response to inquiries from the Senate Environment and Public Works Committee and Senate Energy and Natural Resources Committee, CEQ undertook a comprehensive examination of the Department of Energy's potential natural resource damage (NRD) costs. An initial report has been presented to the Congress, and a revised study is now being prepared in response to comments from the General Accounting Office (GAO).

CEQ has also worked to mediate disputes and resolve conflicts among the federal agencies on issues that have been of particular importance to Members of Congress, states, localities and the public. For example, CEQ served as the Administration's lead agency in efforts to address concerns raised by the Northwest congressional delegation about costs incurred by the Bonneville Power Administration (BPA) ratepayers for fish and wildlife recovery and protection purposes. CEQ coordinated the positions of, and resolved disputes, among the interested federal agencies. As a result, Senator Hatfield, other members of the Northwest delegation and Vice President Al Gore announced an agreement last year that limited BPA's fish and wildlife costs, while ensuring that adequate resources are available to perform essential restoration and protection activities.

Land management and development can proceed in harmony with conservation goals if there is cooperation between the federal government and landowners. CEQ has worked closely with the natural resource agencies and private landowners to promote the development of habitat conservation plans (HCP's) that reconcile environmental and economic objectives. Last year, the Administration signed a HCP with one of the largest developers in Southern California that clears the way for thousands of homes to be built free of endangered species concerns. Similarly, the Administration concluded a HCP with a timber company in Washington State that provides a 100-year guarantee that all of their endangered species obligations have been met. Also underway are several habitat conservation plans in coordination with California's Natural Communities Conservation Planning (NCCP) program. For example, the Administration is currently working with Orange and San Diego counties to develop a comprehensive initiative that will protect habitat while ensuring that housing, transportation, grazing, control of noxious weeds and exotic pests, recreational facilities, and fire management needs are met. Currently the Administration has some 260 HCP's complete or well underway. CEQ actively works to bring these efforts to a successful conclusion.

As directed by NEPA, CEQ is responsible for overseeing implementation of the environmental impact assessment process. CEQ's responsibilities under NEPA are potentially related to virtually all federal programs. Federal agencies and departments, state and local governments, business and industry, private citizens and public interest organizations all seek CEQ's advice in the context of particular NEPA issues. Consultation on NEPA issues is an on-going activity that is important to ensure consistent and sensible NEPA implementation. Examples of such consultation include CEQ's recent work with: the Treasury Department regarding the closure of a portion of Pennsylvania Avenue; the New York/New Jersey Port Authority regarding the appropriate process when an EIS is prepared by a contractor; representatives of the gas pipeline industry regarding integration of NEPA and other environmental and historic review requirements to increase the efficiency of the process; and a pharmaceutical trade association regarding streamlined NEPA procedures for drug approval by the Food and Drug Administration.

In fact, it was the latter consultation that provided CEQ with invaluable insights on how, overall, to improve the Food and Drug Administration's (FDA) NEPA procedures. FDA had often required both industry and the agency to prepare what proved to be unnecessary environmental assessments, particularly regarding actions involving new drug applications. Working with CEQ, the FDA recently completed a draft proposed rule that streamlines its procedures, substantially reducing the number of industry environmental assessments and requisite FDA staff time. The FDA estimates that the proposed rule will result in an annual cost savings to industry of approximately $15.7 million. As a consequence of this effort most new drug applications, which rarely involve significant environmental impacts, will be excluded from environmental assessment requirements.

Similarly, CEQ recently worked with the Department of Energy (DOE) as they developed proposed revisions to their NEPA regulations. DOE's proposed rule includes several streamlining features such as: establishing new categorical exclusions; expanding existing categorical exclusions; and eliminating the preparation of extensive documentation prior to preparation of an environmental impact statement (EIS). In consultation with CEQ, DOE has simplified public notification requirements and streamlined the requirements for the content of Findings of No Significant Impact. These changes, and others like them, focus available resources on significant environmental issues, reduce costs and staff time while ensuring the environmental assessment process is useful to decisionmakers and the public.

CEQ often is called upon to assist on projects wherein there are substantive disagreements among the agencies of jurisdiction. Under the provisions of the Environmental Quality Act of 1970, CEQ is responsible for coordination and mediation of disputes among agencies on matters affecting environmental quality. For example, CEQ was asked by Senator Johnston to look into the Red River Chloride Project affecting the four state Red River Valley region in Texas, Louisiana, Arkansas and Oklahoma. Because of chloride levels, Red River waters cannot effectively be used for municipal, industrial or agricultural purposes. For years, the states had been engaged in an effort to enhance the utility of the Red River. Since 1994, however, agencies had been at odds over particularly sensitive components of the proposed adaptive management plan for the Red River. At Senator Johnston's request, CEQ worked with the appropriate agencies to resolve their concerns related to the EIS and the Project is now moving forward.

I have listed above just a few of the initiatives CEQ has worked on recently – there are many more that I would be happy to inform the Committee of is there is interest. At this point, I would like to outline for the Committee some of the priorities we see for the coming fiscal year.

## PRIORITIES FOR THE COUNCIL ON ENVIRONMENTAL QUALITY

In enacting NEPA, Congress recognized that federal agencies and departments must consider the effects of proposed actions on the quality of the human environment during the decision-making process. NEPA was intended by its authors "to make more rational the process by which the federal government makes decisions."[2] While CEQ with its limited resources cannot play a role in every federal decision – nor was this intended to be the case – it can and does play a unique role in minimizing redundancy, mediating conflict, fostering efficiency and creativity, and ensuring scarce federal resources are wisely used. As the President's senior advisor on environmental policy matters, CEQ has worked to advance this Administration's commitment to challenge the status quo and bring innovation to bear on environmental policy.

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[2] CEQ Revisited: The Role of the Council on Environmental Quality by Boyd Gibbons, Prepared for the Henry M. Jackson Foundation (1995).

In further support of the President's efforts to reinvent government and ensure common sense reform, CEQ is nearing completion of a NEPA Effectiveness Study. The Effectiveness Study is a comprehensive look at how the statute has been implemented over the last 25 years. The Study demonstrates that CEQ's regulations provide agencies and departments with a flexible framework within which effectively to integrate social, economic and environmental concerns into their planning processes while simultaneously identifying areas for improvement within the agencies and departments. Some agencies have missed the intent of NEPA – producing reams of documentation rather than using NEPA as a strategic decision-making tool. In many instances, agencies currently produce plans then subsequently produce an EIS. Rather, the agencies should be producing one planning document that satisfies NEPA. In other words, agencies must integrate the planning process with the environmental impact analysis. An additional aspect of integration requires agencies to work together from the outset. Agencies should be developing alternatives together so that there are no surprises, no endless returns to the drawing board and no multiplication of NEPA documents. Recommendations for additional reforms will be forthcoming shortly and I would be pleased to discuss them with you further at your convenience.

This year, CEQ will coordinate the Administration's effort to reform several key pieces of legislation. Already CEQ has played a major role in the development and passage of several of the bipartisan legislative initiatives considered by the Congress to date, including the Senate's Safe Drinking Water Act; the Small Business Regulatory Reform Act; and targeted reforms to the Resource Recovery and Conservation Act (RCRA). In the latter case, CEQ worked with other agencies, Members of Congress, and a broad coalition of more than 50 companies and trade associations to develop two targeted reforms to the Resource Conservation and Recovery Act (RCRA). The first "rifleshot" reform eliminates a duplicative and costly layer of regulation already covered by the Clean Water Act or the Safe Drinking Water Act and is estimated to save half a billion dollars or more in compliance costs for industry. The House and Senate passed this legislation and it has since been signed into law by the President. Additionally, CEQ is now working with industry, environmental groups and Members of Congress on a second reform that would eliminate redundant RCRA regulation of wastes generated during environmental cleanups.

CEQ also co-chaired an interagency effort to bring administrative and legislative reforms to Superfund, and is now working with both parties in Congress on development of a bipartisan legislative package. We are coordinating the preparation of proposals on the major issues in the Superfund debate in the hope that a bipartisan bill may be enacted by the Congress this year. As part of this effort, we recently announced a major proposal on liability, in an effort to reconcile the Administration's position with the concerns expressed by Members of Congress.

Both administratively and legislatively, we have worked closely with the Environmental Protection Agency (EPA) and other agencies on initiatives to address the Brownfields problem. This effort was reflected most recently in the targeted Brownfields tax incentive, which the President announced in his State of the Union address and included in his Fiscal Year 1997 budget request. A very good example of our work to bring the environment and the economy together, the Brownfields initiative promises to bring redevelopment to America's abandoned toxic-waste sites and new hope to communities across the country.

CEQ is leading an effort to promote dispute resolution not only among federal agencies, but between federal agencies and local communities, states, tribes and other parties interested in the implementation of the National Environmental Policy Act. Currently, far too many disputes over proposed actions such as constructing a new highway, managing federal land or siting a new prison only get resolved in the courtroom. While some situations will inevitably end up in litigation, CEQ believes that many conflicts can and should be resolved without resorting to the judiciary. In that vein, CEQ has begun an initiative to develop and promote alternative ways of resolving disputes in the NEPA context. We are focusing on using the NEPA process itself in a manner that is more likely, at the end of the day, to achieve consensus regarding the underlying decision, as well as the more traditional use of alternative dispute resolution (ADR) methods as a substitute for litigation. We recently began this effort with an informal seminar on ADR for representatives of a dozen departments and agencies, and are now refining our strategy to more forward with this initiative.

Along with the National Economic Council (NEC) and other federal agencies, CEQ spearheaded the environmental review effort associated with the lifting of the Alaska North Slope Export Ban. On April 28, the President acted to lift the twenty-three year old export ban on Alaska North Slop oil by determining that it was in the national interest to do so, subject to certain environmental conditions. A June 1994 report by the Department of Energy (DOE) projects that lifting the current ban on the export of Alaskan North Slope oil will increase domestic oil production by as much as 110 thousand barrels per day, raise significant revenue for the Federal government and the states of Alaska and California, and expand net U.S. employment by up to 25,000 jobs. The Administration previously had endorsed the lifting of the ban on the export of Alaskan North Slope oil and committed to ensuring necessary environmental reviews were conducted. CEQ spearheaded this review effort, working with the National Economic Council and other appropriate federal agencies, and completed this work in a successful and timely fashion.

In the area of natural resources, CEQ has developed a pilot project with the Forest Service designed to create a more efficient way of managing the NEPA process associated with the issuance of grazing permits. The central thrust of this effort is to make the NEPA process work better and cost less while ensuring that the environment and multiple-uses of the land are protected. The new process is being field-tested at four National forests – the Caribou in Idaho, the Wenatchee in Washington, the Santa Fe in New Mexico and the Grand Mesa-Uncompahgre-Gunnison in Colorado. The project is ongoing but results to date suggest that changes in management processes will yield efficiencies and higher quality decisions.

As a result of the pilot project, CEQ and the Forest Service have developed objectives to guide managers and improve the process. These objectives include: develop a method to institutionalize landscape analysis and the NEPA process; work through group activities and analyses so that, whenever possible, one analysis can cover multiple grazing allotments; develop a method that helps managers make higher quality decisions and spend more time on the ground to monitor those decisions; change the focus from NEPA as a compliance document to NEPA as a strategic decision-making tool.

As this Committee is aware, CEQ is also charged with delivering an annual report on environmental quality to the Congress. A major priority for the coming fiscal year will be the completion of the 1996 Annual Report on Environmental Quality. Currently, we are completing work on the 1994-95 Annual Report which has been delayed by the absence of a full-year appropriation and our consequent loss of staff. I anticipate completion of this report by late summer with submission to the Congress soon thereafter.

These are just a few of the initiatives on which CEQ will focus its attention. Certainly there will be others – some of which may be of particular importance to you.

Mr. Chairman, Senator Mikulski and Members of the Committee, I appreciate this opportunity to submit testimony. I want to assure you that CEQ will be an example of our mutual commitment to protecting the environment, ensuring the health and well-being of the citizens of this great country and building lasting economic opportunities for all Americans. I look forward to our continued work together.

Thank you.

## PREPARED STATEMENT OF GEORGE KNIGHT, EXECUTIVE DIRECTOR, NEIGHBORHOOD REINVESTMENT CORPORATION

Mr. Chairman and Members of the Committee, thank you for the support you have given the Neighborhood Reinvestment Corporation and the national NeighborWorks® network. I am pleased to present the Corporation's request for FY 1997 for $55 million. We are especially grateful for the FY 1996 appropriation, which enabled 17,000 families to retain or improve their homes and become stronger stakeholders committed to renewing their communities.

As you seek to reduce the size of the federal bureaucracy and return decision-making and responsibility for strategic development to states and municipalities, the value of carefully placed public dollars that enhance individual and corporate investment in areas of great need becomes even more critical. Many communities have experienced severe disinvestment and are on the verge of rapidly sliding downhill. For these communities, a small infusion of federal support -- combined with homeowners' willingness to take on debt for the sake of their families and lenders' increased enthusiasm in working in these communities -- can result in an abundance of locally leveraged resources that have a great impact on whether they improve or drain the economy.

For nearly 20 years, the Neighborhood Reinvestment Corporation has successfully addressed the serious problem of disinvestment and decline in the nation's urban, suburban and rural communities. The return on the relatively small federal investment in the Corporation and its network of NeighborWorks® organizations has been tremendous in states all across the nation. This is because these resources are magnified, especially at the local level, through a proactive asset-building process.

Neighborhood Reinvestment was created by Congress in 1978 to "promote reinvestment in older neighborhoods by local financial institutions working cooperatively with community people and local government ... relying largely on local initiative for the specific design of local programs" [P.L. 95-557, Section 602(b)]. Neighborhood Reinvestment accomplishes this goal in several significant ways.

The Corporation:

- Creates NeighborWorks® organizations and charters existing organizations as affiliates of the NeighborWorks® network;
- Expands the capacity of existing NeighborWorks® organizations so that they can serve more residents and communities;
- Monitors the NeighborWorks® organizations' programmatic progress and financial management;
- Responds to the organizations' needs for onsite training and technical assistance, financing, revitalization strategies and formation of collaborative efforts, especially in the areas of home ownership and affordable mutual housing;

- Trains and informs members of the community-development industry; and
- Supports a national secondary market, Neighborhood Housing Services of America (NHSA), in its efforts to provide low-cost loan funds to the NeighborWorks® network. By attracting the resources of "social investors" like State Farm Insurance, Allstate Insurance, World Savings & Loan, United Services Automobile Association (USAA) and church pension funds, NHSA is able to purchase loans from NeighborWorks® organizations' revolving loan funds, replenishing them so that they can make additional loans. With its social-investor partners, NHSA offers "nonconventional" lending products.

At the national level, Neighborhood Reinvestment fosters partnerships of resident leaders, public policymakers and private-sector leaders who work together to create large-scale mechanisms and programs for use by the entire community-development industry. Partnerships with large financial institutions and insurance companies, federal and state housing program administrators, secondary markets, relevant trade associations, foundations and others enable the Corporation to facilitate cutting-edge policies and programs that have a significant impact on the field of community-based development.

At the local level, residents, the private sector and the public sector work together to determine community needs, target appropriate neighborhoods, select sites for reinvestment, work with families to rehabilitate or purchase housing, create loan products appropriate for neighborhood residents, and influence community health and stability. All are working in lower-income communities that have made a grassroots commitment to self-improvement.

Today, 177 local community-based organizations working in 330 municipalities attest to the success of the partnership approach that is the hallmark of the Corporation's approach to community revitalization.

### FY 1995 Results

FY 1995 was a record-setting year for the NeighborWorks® network. In 1995 alone:

- 8,522 units of affordable housing were newly created or substantially rehabilitated, including those for:
    - 4,091 families who became first-time homeowners and
    - 773 low-income families who were provided with decent and affordable housing through mutual housing associations;
- An additional 9,213 units received minor repairs;
- $31.3 million was lent from local NeighborWorks® loan funds to responsible families unable to borrow from private or public sources;
- Approximately $355 million was provided in coordinated lending and other direct investment through private and public partnerships;
- $52.4 million in nonconventional loans were purchased by NHSA;
- NHSA social investment commitments reached $194.8 million; and
- 3,394 units were kept permanently affordable through mutual housing associations, in addition to 4,067 affordable rental units.

Among the most successful strategies employed by the Corporation in FY 1995 was its NeighborWorks® Campaign for Home Ownership. The Campaign began in 1993 as a way to focus attention and resources on home ownership as a powerful means of stabilizing lower-income communities. Thirty-six month data from this Campaign indicate that network organizations with their conventional lending partners are reaching markets that otherwise would not have been served. (These markets include minorities, single mothers and those making less than 80 percent of median income.) The Campaign is strengthening the asset base of thousands of families across the country and strengthening the stakeholder base in America's neighborhoods.

At the 36-month mark, the Campaign had helped 6,530 families purchase 7,428 housing units. (There are more units than families because some of the properties are "two-flats" or "three-flats," which are typical in Chicago, parts of the East, and other areas. Highlights include:

- 97 percent are first-time homebuyers
- Average cost per housing unit is $60,956, compared to a U.S. average unit cost of $136,700
- Home ownership is less costly than renting for 29 percent of the new homeowners.
- Home ownership is only marginally more costly for another 11 percent,
- $415.5 million is the total investment generated by the Campaign.

Among the lessons learned thus far in the Campaign are the value of both tandem lending and mortgage insurance in reaching lower-income families with sound conventional loans. These techniques greatly expand the impact of previous public funds, utilize the powerful existing private mechanisms to tap the capital markets, and provide the psychological lift that comes to families able to pay their own way.

The key to long-term success is mitigating the risk of default. Thus, we created NeighborWorks® Full-Cycle Lending™, to encompass the bundle of risk-reduction activities. The process involves: presales contracts, post-purchase counseling, flexible loan products and default-intervention strategies. These increase lenders' confidence in loan clients' ability to qualify for mortgages and maintain their properties and mortgage payments over time.

Families who earn below 80 percent of an area's median income often have few housing choices or spend a disproportionate amount of their available income on rent. A creative and innovative alternative for them is mutual housing, which also experienced growth in FY 1995.

Mutual housing associations (MHAs) create multifamily housing that offers both community control over housing management and an accumulation of equity for residents of the mutual. Residents have the opportunity of a lifetime occupancy; their monthly payments do not increase without the approval of the association's resident-led governing board; and they are involved in daily management of the property and in decisions concerning development of additional mutual housing sites. Mutual housing associations are thriving in the NeighborWorks® network; currently there are 12 associations managing 3,394 housing units. MHAs provide mixed-income housing; while 44 percent of the residents fall below 50 percent of median income, the mutuals do not require ongoing federal support. In addition to housing, MHAs contribute to an overall better quality of life for their communities by sponsoring leadership training, neighborhood safety and awareness programs, and other community services.

NHSA, our secondary market, had a record-breaking year in FY 1995, jumping from $23.9 million in loan purchases in FY 1994 to $52.4 million in '95. This increase reflects the lowered interest-rate environment, extraordinary efforts on the part of NeighborWorks® organizations (especially those in the Campaign for Home Ownership) and an across-the-board jump in housing-rehabilitation lending. Reaching production levels not predicted for two or three more years, NHSA raced through its reserves at such a rate that it was forced to dramatically slow loan purchases partway through the year. NHSA's board temporarily has accepted a lower level of reserves to accommodate the built-up demand; however, this year loan purchases will be held to the $30 million-to-$40 million level in order to rebuild reserves. The search for both new investors and new sources of reserves is a pressing challenge.

New capital pools are being developed with new partners such as the State of New Mexico, Freddie Mac and Fannie Mae, along with stepped-up participation by local governments and the Affordable Housing Program of the Federal Home Loan Banks.

As of September 1995, NHSA's capital pools totaled $194.8 million, led by $73.4 million from World Savings, $30 million from State Farm Insurance Companies and $24.5 million from Allstate Insurance Company. New agreements with Freddie Mac, Fannie Mae, USAA Insurance Company and the State of New Mexico are expected to generate an additional $20 million in loan-purchase power during FY 1996.

## FY 1996 Progress Report

In FY 1996, we anticipate NeighborWorks® organizations using $32 million from their revolving loan funds in conjunction with $330 million from private and public sources to produce, rehabilitate or repair approximately 18,000 units of housing.

Goals for FY 1996 include development of one new NeighborWorks® organization and affiliation with five existing nonprofits. As of December 31, 1995, two new developments and four affiliations were underway. These organizations are located in Worcester, Mass.; Woonsocket, R.I.; West Palm Beach, Fla.; Deadwood, S.D.; Montana (a statewide effort); and the Navajo Nation. The development process with the Navajo Nation is particularly exciting as the national secondary markets, the Federal Home Loan Banks, HUD and large private-sector institutions seek to bring investment to Native

American communities. Neighborhood Reinvestment is helping to create some of the infrastructure -- especially in the areas of credit counseling and home-ownership promotion -- needed to create and market affordable housing for low- and moderate-income Navajos. On April 19, 1996, the Navajo Partnership for Housing was officially incorporated and elected its first 21-member board of directors. In this and other efforts, we are excited to serve as a convener and collaborator to pull together disparate groups and help them constructively tackle the roadblocks to rebuilding America's distressed communities.

The anticipated restructuring of the HUD Section 8 program now being discussed is likely to offer both challenges and opportunities for NeighborWorks® organizations. The challenges may well lie in raising capital quickly enough to purchase unwanted buildings from owners before they become outrageous eyesores and economic drains on the neighborhood. Opportunities may exist in the restructuring process to preserve thousands of Section 8 units as long-term affordable properties. In the past, mutual housing associations have taken advantage of available properties to expand their mixed-income approach to providing long-term housing. The orientation of all properties to a market approach may, over time, strengthen distressed neighborhoods that currently have a two-tiered system. This could encourage owners of smaller properties to see them as better opportunities for investment and return.

Based on a $1 million capital grant provided to NHSA by Neighborhood Reinvestment in FY 1996, NHSA has the capacity to purchase and/or originate $12 million in loans. However, the demand of a $30 million-to-$40 million level of activity requires the raising of considerable additional reserve capital as well as continue to raise low-cost social investments. Led by Roger Joslin, Chairman of the Board, State Farm Fire & Casualty Companies, NHSA's trustees have agreed to take on the challenge of raising this additional reserve capital and social investments.

## FY 1997 Potential

Neighborhood Reinvestment does not design programs for its network. Rather, the Corporation supports and enhances local plans and determinations of need by:

- Attracting new resources and collaborators;
- Providing targeted technical assistance;
- Disseminating cutting-edge strategies to NeighborWorks® members through informational seminars, site visits and training sessions at the district and regional level as well as through the Corporation's national Training Institutes; and
- Raising cautionary flags if enthusiasm outstrips expertise and resources.

In FY 1997, Neighborhood Reinvestment expects to develop two new NeighborWorks® organizations and affiliate with 12 existing nonprofits, thereby meeting about 10 percent of last year's requests (unsolicited) for assistance.

In FY 1997, the Corporation will emphasize the development of systems and staff that enable NeighborWorks® organizations to more effectively implement innovative housing strategies such as those developed for the NeighborWorks® Campaign for Home Ownership.

The support of NeighborWorks® organizations in preserving affordable housing -- through single- and multifamily housing rehabilitation, the creation of mutual housing associations, new home construction, acquisition of problem properties or properties in the process of disposition, investments in revolving loan funds, and other direct investments -- is essential to restoring a positive quality of life in distressed neighborhoods. Though NeighborWorks® organizations have never subscribed to the simple belief that housing alone will change a community, they maintain the conviction that safe, affordable housing is a key element in comprehensive community revitalization.

The availability of equity capital grants from Neighborhood Reinvestment is vitally important to create a local asset base from which to build future community-revitalization initiatives. By having such funds, NeighborWorks® organizations are able to "take a seat at the table," thus expanding the home-ownership opportunities for lower-income Americans. These opportunities in turn make asset-builders of families who otherwise would have a difficult time finding a toehold on the economic ladder. Owners also pay real-estate taxes -- in Chattanooga the tax base expansion has more than offset the public investment.

In FY 1997, the Corporation expects that training contact-hours will total 100,000. This is an increase of 12,500 (14 percent) compared to 1996, and a reflection of the insistent demand for "how to" knowledge. Neighborhood Reinvestment's ability to provide such training greatly magnifies the spread of lessons learned. Training

Institutes that will be held in November 1996 in San Francisco, February 1997 in Atlanta, July 1997 in Chicago, and September 1997 in Washington, D.C., will train over 2,500 participants.

To further expand the reach of lessons learned at an efficient cost, Neighborhood Reinvestment intends to expand its use of computer technology to reach more diverse audiences. Two main tools we will use to capitalize this new endeavor include our new wide-area network for internal information-sharing and the Internet/World Wide Web technology for external communication facility.

Meeting the increased capital needs of the NeighborWorks® network is critical to NHSA's efforts to revitalize deteriorating neighborhoods. As the network continues to grow and production levels continue to out-pace resources, additional flexible capital is needed for home ownership, housing rehabilitation, permanent financing for multifamily nonprofit ownership, and real-estate development financing. NHSA has developed a number of innovative and flexible loan products designed to address those needs.

In FY 1997, NHSA will be challenged to meet an ever-growing need for secondary market resources. Based on record-breaking levels of activity in FY 1995 and projected levels in FY 1996, NHSA expects demand for its secondary-market resources to outstrip that which can be secured by Neighborhood Reinvestment's annual capital grant. With the $2.5 million capital grant in the requested FY 97 funding, and assuming an eight percent reserve level, NHSA would be able to purchase $31.25 million in loans from the NeighborWorks® network.

To purchase loans above $31.25 million, NHSA will raise additional capital reserve funds with the intention of purchasing approximately $50 million in loans.

### How NeighborWorks® Partnerships Succeed: An Example

When a new NeighborWorks® organization is created or is established as the result of an affiliation with the network, a chain reaction typically takes place. An initial partnership base expands; services provided to the community broaden in scope; and collaborations with other organizations increase. The NeighborWorks® organization becomes immersed totally in the community, dealing with not only housing issues but with other community revitalization issues like crime, education, youth development and job creation.

For example, when Neighborhood Housing Services (NHS) of Chicago expanded into the West Humboldt neighborhood in 1979, its intent was to create a viable housing market in the community. Initially, this NeighborWorks® organization focused on providing lending and insurance counseling, technical assistance for housing rehabilitation, loans and advocacy support to community residents. The organization's achievements over the last 16 years include:

- 500 new homes built or rehabilitated;
- 200 vacant homes reclaimed for occupancy; and
- An 87 percent increase in conventional lending.

While these successes are notable, over time the organization saw the need to address not only affordable housing but the physical and social deterioration of the neighborhood. In 1992, the NHS joined forces with more than 80 civic, business, religious, school and human-service organizations to form the West Humboldt Park Development Council. Since its establishment, the Development Council has focused on building the capacity of local residents and community organizations to work cooperatively toward a community that is safe, supports families, and has good schools, affordable housing and jobs. The Development Council has worked to transform a mile-long stretch of deteriorated commercial buildings that has long suffered from blight and crime. Together, members of the Council have been instrumental in the:

- Decline of crime by 19 percent;
- Increase in high school graduation by 21.4 percent;
- Opening of a day-care center for 256 children;
- Organization of six block clubs participating in an anti-crime and safety initiative; and
- Development and presentation of the Chicago Land Use Plan to the community.

This ability to meld various individual talents to work toward unified neighborhood revitalization is what changes and shapes communities.

Neighborhood Reinvestment's NeighborWorks® network is uniquely positioned to both continue its focus on target neighborhoods and to broaden its reach in ways that have city-wide, regional and national impact. Over the last 20 years, with a relatively small staff, focused areas of geographical concentration and targeted technical and financial assistance, Neighborhood Reinvestment has shown that progress can be made in distressed communities. As you face the difficult task of making discretionary spending cuts and look for model programs that truly leverage federal dollars, we ask that you consider our track record over the last two decades as evidence that Neighborhood Reinvestment is a value-added vehicle that guarantees a high return on the federal investment. We appreciate the continued support of Congress in ensuring such positive changes for America's low- and moderate-income communities.

Thank you for your attention, support and encouragement.

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## PREPARED STATEMENT OF GIL CORONADO, DIRECTOR, SELECTIVE SERVICE SYSTEM

The Selective Service System family consists of dedicated civilian employees, active duty military, State Directors, 500 National Guard and Reserve Officers, and over 11,000 patriotic volunteer board members from every corner of the Nation.

Although they staff a small agency with an annual budget of less than 23 million dollars, they continue to furnish America's only time-proven, inexpensive defense insurance policy. The President, the Secretary of Defense, the Armed Services, key Members of Congress from both sides of the aisle, national veterans and patriotic organizations, and most importantly, the American people, all agree that preserving the Selective Service System is necessary to keep America the world's greatest Nation.

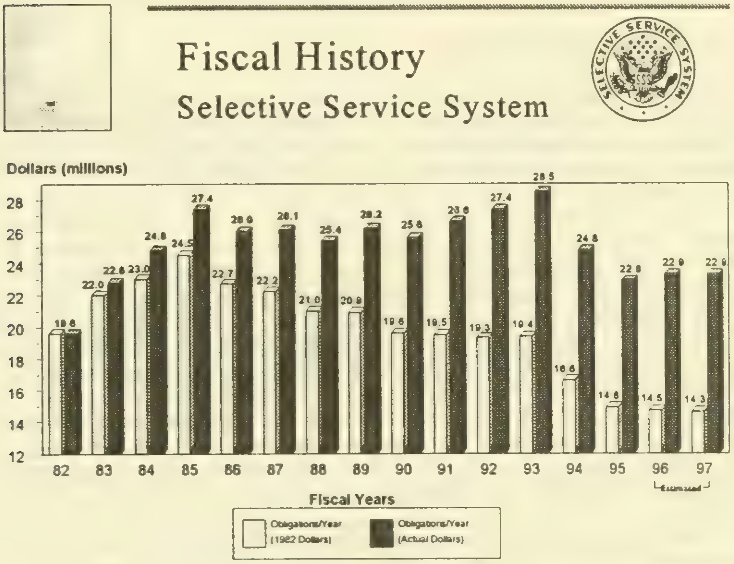
America's young men support the System with their actions. The national overall registration compliance rate is 94 percent, and for draft-eligible men, ages 20-25, compliance is 98 percent. Although most Americans would not like to see a return of the draft, they nevertheless understand that we still live in a dangerous and uncertain world. With the cutbacks in the defense budget, and shrinking armed forces, they see this Agency as a hedge against underestimating the number of soldiers needed to fight in a future crisis. They also know that today's Selective Service System ensures a fair and equitable draft, in contrast to the trouble-prone conscription program of the Vietnam era.

But the Selective Service System represents far more. For present and future generations of America's young men, it represents the last link between society-at-large and today's volunteer military. It is a reminder that, as Americans, we are personally responsible for national security. Its very existence tells the world that, if necessary, we will serve to defend our Nation as others have so gallantly done before. Without Selective Service, young men might be inclined to forego their individual responsibility to be ready to defend America.

The President's budget request for FY 1997 proposes funding the Selective Service System at $22,930,000. This is the same amount appropriated in FY 1995, and it was also the conference amount for FY 1996. Congress and the Administration established a new baseline for the Agency's budget in FY 1995, with no increases in either FY 1996 or FY 1997. At the current level, the Agency continues to perform missions mandated under Federal law, but it must make adjustments to programs to offset Federal pay raises and inflation. Many programs were trimmed and a few eliminated to compensate for the loss of available funds.

**Mission**

The SSS mission is to be ready to furnish the DoD with personnel for military service in a national crisis, and to implement an Alternative Service Program for conscientious objectors. The Agency remains extremely important to national defense preparedness. The mission and structure of the SSS have been thoroughly reviewed over the last few years. Each review also embodied the principles and objectives of the ongoing National Performance Review. The Agency's purpose and mission were defined and redefined, leading to a May 18, 1994, announcement by President Clinton in which he recommended continuing the SSS and the registration requirement for young men.



The President also requested that DoD update its emergency manpower requirements for the SSS based on current threat scenarios, re-examine time lines for how quickly manpower must be provided, address a possible draft of skilled personnel, and review the arguments for not including women under the registration requirement. The new DoD requirements increase SSS delivery time from 13 days for untrained personnel and 42 days for health care personnel to 193 and 222 days, respectively. The longer lead times allow preparation for, and implementation of, a two-step classification and induction process that would give draftees additional time to arrange personal affairs before reporting for induction.

In August 1995, Secretary of Defense William Perry wrote a letter to the chairman of the Appropriations Committee. His letter supported the continuation of a viable SSS in conjunction with right sizing defense forces, and urging Congress to provide adequate funding for the SSS. For the record, a copy of the letter is included with this statement. Similar letters of support were written by many patriotic organizations.

But despite the reaffirmation of need and mission at the highest level, I continue to look for cost savings and greater efficiencies in the Agency. I have assigned six senior people to evaluate a variety of ideas from Agency employees. In addition, I have met with the heads of the Corporation for National Service, the U.S. Postal Service, and the Federal Emergency Management Agency seeking greater interagency cooperation and mutual support.

## Focus on Registration Awareness

One of the Agency's goals in FY 1997 will be to continue making the public aware of the Selective Service registration requirement. The law requires all eligible men to register within 30 days of their 18th birthday. Preserving high compliance helps ensure that if a draft were held today it would be fair and equitable.

This year, SSS made a particularly strong attempt to reach young men in the inner cities, a group which is believed to have lower rates of registration compliance. SSS has an on-going campaign in two test markets: the Washington-Baltimore area and Cleveland, Ohio. The Agency has distributed radio public service announcements, posters and other print media aimed specifically at inner city young men and those who influence them. The campaign informs adult Hispanic and African-American parents, teachers, social services workers, and coaches about the registration requirement. The Hispanic slogan "¡Hazlo Por Ti!" ("Do it for you!") is being used in all Spanish language registration reminder messages. Also, radio public service announcements were recorded pro bono by well-known Hispanic celebrities. Public service announcements released nationally a few months ago are aimed at a more general audience and are now airing on radio and television.

Recently a home page site was introduced on the World Wide Web (http://www.sss.gov) where registration and other Agency information is available to anyone with access to the Internet. I am pleased that so many people are visiting the Agency's site. Its content will be expanded in the near future.

Awareness activities are also happening at the grassroots level. Last year, the SSS received over 23 proclamations from state governors and mayors of large cities commemorating the Agency's 55th anniversary celebration and supporting the registration requirement. To date, 18 states have passed legislation requiring young men to register with Selective Service as a prerequisite for receiving state educational assistance or state employment. This is in addition to Federal laws requiring men be registered to be eligible for Federal student financial aid, job training, and appointment to most Federal jobs.

## Registration

The Registration Reminder Mail-back Program continues to be a success. More men now register this way than by going to the post office. Young men can register by simply filling out a postcard they receive in the mail around the time they turn 18. Completing and returning one of these cards is less expensive for the government and also more convenient for the registrant. Young men may also register at their high schools through a program SSS has developed called the High School Registrar Program, in which a teacher or counselor is appointed to help students understand why they need to register with the SSS and then help them do so. Young men may also register when they sign up for Federal student financial aid or apply to the Job Corps and Job Training Partnership Act programs. Of course, registration forms are still available at any neighborhood post office.

Although only a small group of registration-age men fail to register, it is paramount that efforts continue to promote the requirement. Each man who fails to register increases the draft vulnerability of men who do. Consequently, the Agency developed an automated compliance program which identifies possible nonregistrants and then sends them a reminder card in the mail. As of February 1996, almost six million men have been registered through this program.

### Operational Readiness

Operational readiness is a principal Agency focus. A national training conference was held in June 1995 in Chicago. It was the first such conference in over a decade and included all State Directors and Detachment Commanders, as well as principal staff members from the Regions, the Data Management Center, and National Headquarters.

Regional training conferences are scheduled for FY 1997 to enhance operational readiness. Training will involve most of the Reserve Force Officers and members of selected Local and Appeal Boards. The goal is to teach a basic understanding of procedures developed for the new mobilization time lines recently provided by DoD, and to prepare for a nationwide readiness exercise to be held in FY 1998.

The new DoD requirements have precipitated many planned changes in the way the Agency would conduct a future draft. All major manpower delivery systems must be revised to accommodate a two-step classification and induction process. Preinduction processing allows registrants to undergo examination and classification prior to being called for induction. Development of these new systems is well underway.

### Health Care Personnel Delivery System (HCPDS)

In response to estimated shortages in health care personnel in the event of a major war, Congress directed the SSS to develop a standby system to meet DoD's requirements. DoD indicated that it could potentially have the need for almost 80,000 personnel in over 60 health care specialities to care for wounded service members. SSS has developed the Health Care Personnel Delivery System to meet these requirements. Original DoD requirements projected the need to have health care personnel delivered for induction within 42 days after initiating any health care draft. However, the new DoD requirements call for the first deliveries of health care personnel 222 days after the start of a major crisis. This would allow enough time to register and examine health care workers, thus creating a pool of personnel who might later be called upon to serve. The Health Care Personnel Delivery System is still being refined.

## Automation Improvements

As a result of the Government Performance and Results Act, the SSS developed a strategic plan and is working on other legal requirements to address performance measures that demonstrate how effectively the Agency is accomplishing its missions

To improve efficiency and conserve resources, SSS is always looking for ways to modernize through the use of new technology. There were several initiatives in FY 1995, and more are under consideration to enhance readiness, automate capabilities and increase staff efficiency. In FY 1996:

- The automated phone system was improved at the SSS's Data Management Center. It handles over 450,000 callers a year. The number of telephone inquiries handled automatically increased from 63 percent to 75 percent. One of the changes allows a caller to generate an overnight registration acknowledgment letter through touch tone commands.
- The Agency installed an Intelligent Character Recognition (ICR) System so that data from registration forms can now be scanned instead of being keyed in manually. This system enables the Agency to enter registration data five times faster and at less cost.
- A special phone line was installed at the Data Management Center so that the Department of Education (DOE) can more easily verify the registration status of financial aid applicants. This will help speed up the approval process for students applying for financial aid.
- Over 4.2 million male applicants for DOE Pell Grants were matched against the Agency registration data base for verification of registration. Over 272,000 young men were registered as part of this process.
- Selective Service assisted the Department of Health and Human Services, Office of Child Support, by providing addresses of over one million men suspected of being delinquent in child support payments.

Some examples for FY 1997:

- Test a small-scale model of a more user-friendly database management system to be used to manage registrant files.
- Continue evaluation of additional forms that could be converted into an ICR format.
- Develop a viable method to off-load older year groups of registrants while retaining the ability to retrieve the records.
- Evaluate the impact the century change will have on the various systems at Selective Service and take the corrective actions necessary.

## The Workforce

Selective Service continues to streamline its workforce. Authorized full-time equivalent staffing (FTEs) steadily decreased over the past several years to 185 in FY 1996. This is the lowest authorized civilian manpower-level since Agency revitalization in 1981.

With its limited ability to hire, SSS, nonetheless, continues to diversify its workforce. Emphasis on recruiting underrepresented groups has begun to produce results. African-Americans are well represented throughout Selective Service. The percentage of assigned Hispanic employees is increasing steadily, however, the Agency must work harder to attract more Asian/Pacific Islanders, Native Americans, and people with disabilities. Increasing the diversity of the workforce will continue to be a priority of the Selective Service System.

### Summary

Mr. Chairman, the Selective Service System is the third tier in the Nation's defense manpower strategy, after the active duty and reserve forces. The Agency is prepared to fulfill its primary mission of providing men to our armed forces in the event it is directed to do so. SSS has followed the lead of this Administration and the Congress to right size and streamline its operations. The FY 1997 appropriation request of $22 ,930,000 will be money well spent on one of the Nation's greatest defense bargains. For less than the cost of one jet fighter, this Agency keeps a structure and the means to provide, in a fair and equitable manner, manpower required for a national emergency.

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## LETTER FROM WILLIAM PERRY, THE SECRETARY OF DEFENSE

24 AUG 1995

Honorable Mark O. Hatfield
Chairman
Committee on Appropriations
United Stated Senate
Washington, D.C. 20510

Dear Mr. Chairman:

As the Appropriations Committee (Subcommittee on VA, HUD, and Independent Agencies) considers Fiscal Year 1996 funding, I urge you to continue adequate funding for the Selective Service System in accordance with the President's Budget request. This small, but important agency should be maintained in its current state of readiness, and its peacetime registration program involving America's young men should be preserved to help ensure that any future draft, if needed, would be fair and equitable.

It is true that the force structure of our Active and Reserve Components can handle foreseeable contingencies. Nonetheless, our Nation would be well served to keep the Selective Service System as an "insurance policy". At a relatively low cost, the Selective Service System provides a hedge that may be required in a future conflict. Arguably, it also serves as a visible symbol of national resolve, demonstrating that America's young men are available and committed to provide for our defense needs. We should maintain this link between the volunteer military and our society-at-large.

Providing adequate funding of the Selective Service System for Fiscal Year 1996 would be prudent at this time as we continue to right-size our forces.

William J. Perry

## PREPARED STATEMENT OF DEPARTMENT OF VETERANS AFFAIRS

### Agency Mission

Our nation has the obligation to provide the highest quality health care to U.S. veterans, and the agency charged with meeting this responsibility is the Veterans Health Administration of the Department of Veterans Affairs (VA). The mission of the VA research and development program is to enhance the quality of health care for U.S. veterans. At present, the research program is designed to integrate clinical needs with fundamental research, and to assure the rapid transfer of new knowledge from the laboratory to the bedside. As a result, veterans benefit from advances in diagnosis and treatment as well as from the talents of the cadre of highly trained physicians who are attracted to the VA system for the opportunity to combine research and clinical care.

The VA's research mission is currently being re-examined by a commission appointed by the new VA Undersecretary for Health Affairs. Under its new leadership, the VA will respond to issues related to the agency's mission and to many of the pressures exerted on the entire U.S. healthcare system. Primary care has been a central element of the VA healthcare system for decades. As the medical community increasingly focuses on primary care, the VA's strengths in diabetes, hypertension, and aging research will continue to make important contributions to the health of both veteran and non-veteran populations.

### Recent Accomplishments

New findings reported by VA researchers in the past year have included:

- The application of molecular biologic techniques to the **rapid diagnosis of tuberculosis**, allowing diagnosis in two days rather than the 4-6 weeks usually necessary for growth of the organism. This should allow for faster institution of treatment and reduced periods of hospitalization.

- New studies showing improved **treatment of ulcers** related to *Helicobacter pylori* infection with a defined course of therapy using a combination of an antibiotic and omeprazole, a drug that inhibits gastric secretion.

- **Important cooperative studies** showing: the efficacy of coronary angioplasty in patients at high risk for bypass surgery; no ill effects from postponing transurethral surgery in patients with moderate symptoms of benign prostatic obstruction; the degree of efficacy of cochlear implant surgery in the profoundly hearing-impaired.

- Studies of the role of some cytokines in **mediating the effects of HIV infections**. VA researchers also have examined the roles of other cytokines on bone structure, demonstrating that the effects of the same cytokine may vary with the sex hormone status of the individual.

Three features have contributed to the success of VA research: a strong emphasis on clinical research that takes advantage of a large patient population and coordinated study programs; the highest proportion of physician researchers on staff of any Federal agency; and an impressive commitment to high quality, merit-reviewed, investigator-initiated research projects. VA research has had an important stabilizing and integrating effect on health care delivery, resulting in enhanced patient care and training of scientists and physicians. Preservation of VA research programs will help attract and retain physicians of the highest quality in the VA system.

Recent initiatives by the VA medical research program include creation of three research centers for basic and clinical science studies of alcoholism as well as a joint effort with the National Institute of Drug Abuse for research on medications to treat or prevent substance abuse. A Nursing Research Initiative is being established at VA medical centers and affiliated universities to train nurses in research and create cadre of nurse research investigators to enable the VA to fulfill its mission.

## Policy and Funding Recommendations

Research is a revitalizing force. In the changing healthcare delivery environment, preservation of VA research programs is essential for the VA to adapt creatively and efficiently to change. The historical alliances between VA and academic medical centers have been mutually beneficial and deserve to be continued.

The FY 1995 VA research budget was approximately $272 million, which included an appropriation of $252 million for VA Medical and Prosthetic Research and a $20 million transfer from the Department of Defense (DOD). The actual amount transferred from DOD was $12.5 million. Most of the Medical and Prosthetic Research appropriation supports the VA Medical Research Service, with total expenditures in FY 1995 of $204.5 million. This budget was sufficient to fund 16% of all new projects, 30% of competitive renewals, and 20% of career development applications. Most career development awards went to individuals with postdoctoral or research associate status. Few or no awards were made at more senior levels.

- FASEB believes that career development awards to VA investigators at more advanced stages of their careers have played an important role in attracting and retaining outstanding individuals to the VA system. Funds should be provided to continue awards at the senior-level as well.

The budget for VA research has not kept pace with inflation. This results in missed opportunities to address research issues related to veterans' health, deterioration of the VA research infrastructure, and a growing inability to provide opportunities for research career development. In recent years, there has been a general decrease in the number of programs funded, and the number of funded programs in 1994 was below the 1981 level (**Figure 2**).

The research budget now represents approximately 1.2% of the entire VA medical care appropriation.

- To reverse this alarming trend and to provide vitally needed resources for the VA research program, FASEB urges that a budget of $297 million be appropriated for the VA Medical and Prosthetic Research Program in FY 1997.

This recommendation includes $20 million currently included in the DOD transfer. Congress should recognize that as veterans age, the VA requires resources for research on treatment of disorders unrelated to active duty military assignments. These initiatives are difficult to plan and develop through a Congressionally mandated DOD pass-through mechanism.

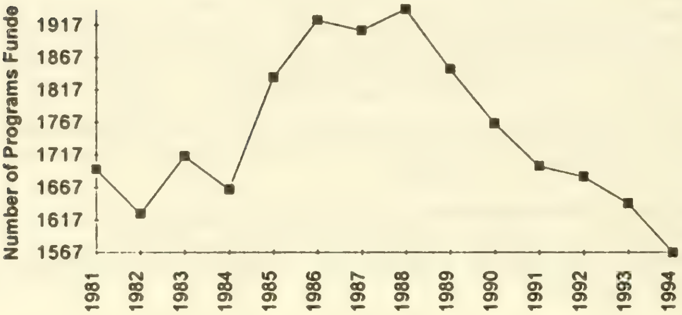
The FASEB recommendations are summarized in **Table 5**. This budget recommendation does not include much-needed support for upgrading the VA's deteriorating research infrastructure and enhancing programs for research career development. Additional funding is needed to reinvigorate merit-reviewed research programs and reverse the significant reductions in funding for research career development. These investments will be especially important as the VA responds to new research needs in the era of changing healthcare delivery. The failure to maintain support for career development has already had a deleterious effect on physician recruitment and retention.

**Table 5**
**Department of Veterans Affairs**
**Biomedical Research Funding and FASEB Recommendation**
**Fiscal Years 1995-1997 (Dollars in Thousands)**

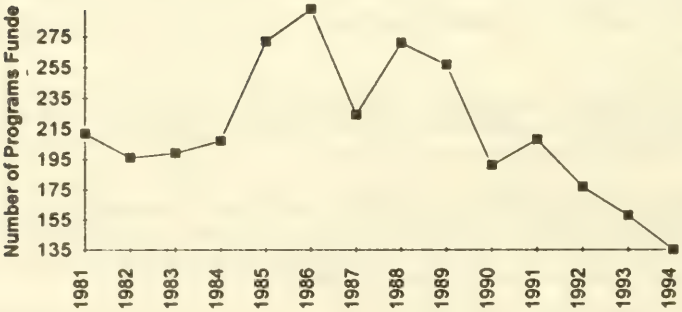
| | FY 1995 | FY 1996 | FY 1997 | |
|---|---|---|---|---|
| | Enacted | Estimate | FASEB Recommendation | % Change from FY 1996 |
| Medical and Prosthetic Research and DOD Transfer | $264,243 | $277,000 | $297,000 | 7.2% |

## Figure 2
## Number of VA Research Programs Funded, 1981-1994, by Program Type

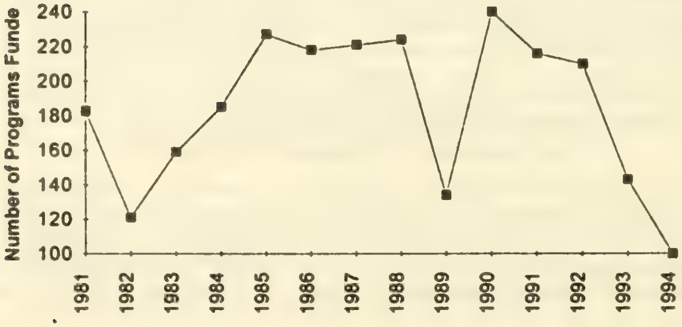
Merit Review Programs



Research Advisory Groups



Career Development Programs



## PREPARED STATEMENT OF SENATOR JOHN KERRY, U.S. SENATOR FROM MASSACHUSETTS

Mr. Chairman, thank you for the opportunity to submit testimony on the fiscal year 1997 VA-HUD-Independent Agencies budget for the Environmental Protection Agency. I am requesting that your committee agree to the President's budget request to provide $100 million for the Boston Harbor cleanup project in your bill.

First, let me acknowledge the enormous task you and your committee have before you in funding important environmental programs in a time of decreases federal allocations. While I wish to convey my concerns about the extremely serious situation facing the residents of Boston in undertaking the multi-billion dollar Boston Harbor project, I want to assure you that this project merits national attention as do other projects in cities that face requirements for similar water infrastructure improvments to comply with federal mandates.

I believe it is in the national interest for the Federal Government to provide direct assistance to the Massachusetts Water Resources Authority (MWRA). As you know, the Boston Harbor project is a massive undertaking which will provide water and sewer services to over 2.5 million people in 61 communities with a total cost, including the combined sewer overflow (CSO) and capital cost improvements, of over $5 billion. The sewage treatment plant is being built under a federal court-ordered schedule that requires completion by 1999.

When the Clean Water Act was originally enacted, Congress acknowledged the great importance of the federal role in cleaning the water we drink and use for so many other purposes. It did so by providing federal support of 50 to 90 percent of the funding for projects on the scale of the Boston Harbor project. The goals of the Federal Clean Water Act are laudable and the environmental benefits to Boston Harbor from the initial water infrastructure improvements are already being felt in the surrounding Bay area. However, while the goals and standards of the Clean Water Act have remained and should continue to remain intact, over the past 15 years we have seen the federal assistant for large water infrastructure projects decline. For instance, the MWRA project to date is at nearly twenty percent for the secondary sewerage treatment project costs excluding the CSO and other improvements that will be required in the future.

Let me finally say that this is not a partisan issue but a bipartisan issue. The Clinton Administration again for fiscal year 1997 -- as it did in prior years and as did the Bush Administration before it -- included $100 million in its budget request. I would ask you and members of the committee to help us secure an appropriations of $100 million for the Boston Harbor project as requested in the President's budget. Thank you for considering this important request.

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## PREPARED STATEMENT OF DOUGLAS B. MAC DONALD, EXECUTIVE DIRECTOR, MASSACHUSETTS WATER RESOURCES AUTHORITY

Mr. Chairman, thank you for the opportunity to present this testimony during your hearings on the fiscal year 1997 VA, HUD and Independent Agencies Appropriations bill. I also want to thank Senators Kennedy and Kerry for their statements in support of the MWRA's need for special funding. I am here to request that you include $100 million for the Boston Harbor Project in your bill.

The Massachusetts Water Resources Authority is a wholesaler of wastewater treatment services and water supply to over 2.5 million people in 61 communities in Massachusetts. The Boston Harbor Project, is constructing the new sewage treatment facility which will provide primary and secondary treatment for the wastewater generated in the communities we serve. The sewage treatment plant is being built under a federal court-ordered schedule that requires completion by 1999. The environmental benefits that we are already seeing in the Harbor result from some of the early improvements we have made, such as the fertilizer plant that transforms the sludge into marketable fertilizer and the completion in January, 1996, of the projects' modern primary treatment plant.

I especially want to thank the Subcommittee for the financial support that it has provided to the MWRA over past years. I am pleased to report that we are winning the fight to save Boston Harbor as it is coming back as a resource of recreational and economic value. Much remains to be done, but there are now fish to be caught, area beaches are open and the swimmers are returning. Striped bass, bluefish and even porpoises are now appearing with frequency in the harbor within sight of downtown Boston.

The Boston Harbor Project is a massive undertaking, bringing our sewage treatment system from its seriously deteriorated and inadequate condition in the early 1980's to a state-of-the-art facility capable of adequately serving the metropolitan area by the end of the decade. It is extraordinarily expensive, however. The Boston Harbor Project will cost an estimated $3.5 billion. The last elements of the Project, the secondary treatment plant and the 9.5 mile outfall tunnel are well into construction and will be completed by 1999.

Of course, we are doing what we can to reduce these costs. The federal court has approved the downsizing of the secondary treatment plant, to treat the smaller flow our more refined estimates and metering now show we can expect. Through this careful reassessment, we will save the ratepayers over $165 million while still achieving environmental standards. And our new CSO Plan that was recently approved by EPA will allow us to reduce our costs for CSO compliance by about $1 billion once it has been approved by the federal court.[1]

We know it is difficult, in these days of tight budgets and many competing demands, to talk of special funding for a single major project. Let me try to tell you why the Boston Harbor Project is special, and why we still need substantial federal grant assistance. Mr. Chairman, this project is a major metropolitan sewage treatment plant similar to those built in the 1970's and 1980's with federal grant assistance, but it differs in important ways. First, we did not have an adequate primary treatment plant and collection infrastructure onto which we could add the required secondary treatment plant. We were forced, by the law, to start from scratch. Second, this project is delayed because of the extended dispute between Massachusetts and EPA over the possibility of a waiver of the secondary treatment requirement under section 301(h). That dispute is resolved, and the federal court has ordered compliance by 1999.

The results of our compliance with the federal requirements have been massive rate increases. Our water and sewer rates in the MWRA service area are now among the highest in the nation; residential rates have increased by more than 284% since FY 1985, when the Authority was established. In FY 1996, rates now average $618 a year for households in our service area. Without major relief on our capital investment or debt service, we expect those rates to rise to roughly $800 per household, by 1999. To date, only about 20% of the total capital costs of this project has been offset by federal assistance, even with the special appropriations of the past few years. Debt service expenses on our current capital investments exceeds $200 million a year – that figure will rise to $300 million a year by 1999.

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[1] The $372 million cost of the CSO Plan is in addition to the $3.5 billion Boston Harbor Project.

We have experienced a citizen revolt of our ratepayers. They have thrown their sewer bills into the Harbor in protest, a latter-day "Boston Tea Party". The political consensus for completing the project may be difficult to maintain without evidence that the Federal Government is willing to commit funds to help meet the mandates of the Clean Water Act. We are spending a lot of our ratepayers' money on this project, borrowing extensively and carrying high levels of debt service. We are receiving assistance from the State. Massachusetts has contributed $19 million in FY94, $27 million in FY95, $32 million in FY96, with $39 million anticipated for FY 97. But we need continued assistance and are seeking $100 million for FY 1997 – the amount requested by the Administration in its FY 1997 Budget.

We appreciate and support your efforts to fund critical water and sewer projects across the country. We hope that you recognize how important these funds are to the completion of the Boston Harbor Project. Thank you again for the opportunity to testify on the needs of the MWRA in the HUD, VA and Independent Agencies Appropriations bill for FY 1997.

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## PREPARED STATEMENT OF SENATOR EDWARD M. KENNEDY, U.S. SENATOR FROM MASSACHUSETTS

Thank you, Mr. Chairman, for this opportunity to testify on the continued funding needs of the Boston Harbor Project and other urgent clean water projects in Massachusetts.

I am grateful for the support that members of the Subcommittee have shown in past years for federal assistance for these projects. I know that the Subcommittee faces tight budget constraints this year, but continued assistance is essential in meeting these important needs.

For two decades, the Clean Water Act has been effective in protecting the nation's lakes, rivers, and coastal areas from harmful pollutants. At the same time, however, the cost of implementing its mandates has placed an extraordinary burden on families and businesses in thousands of communities across America.

In Massachusetts, many of my constituents face water and sewer rates that exceed their property taxes. Low-income families have had their water shut off because they are unable to pay their soaring bills, which will continue to rise in the future. Many businesses have considered leaving the state altogether because of their concern that projected rate increases will put them at a competitive disadvantage. If the federal government fails to maintain its commitment to Massachusetts' clean water projects -- the largest of which is the Boston Harbor Project, which is scheduled to completed in 1999 -- the long-term economic health of the entire region will suffer.

In recent years, both President Bush and President Clinton have recognized the importance of the Boston Harbor Project, and have recommended $100 million a year in federal aid for the project. That figure represents 20% of the project's total cost. This federal share is still well below that provided for many other clean water projects across the country, and it is far below the "full federal funding" called for in the Unfunded Mandates Act. Seventy-six percent of the cleanup cost is being shouldered by the 2.5 million ratepayers in the 61 Boston area communities covered by the project. Ratepayers are paying an average of $627 a year for water and sewer service. By the year 2002, their rates are expected to exceed $1,000 a year.

Our Congressional delegation has encouraged the EPA and the Massachusetts Water Resources Authority which oversees the cleanup of Boston Harbor, to work together to reduce the costs of the project, without compromising basic public health and environmental standards. I am pleased with the progress MWRA is making to achieve these goals. Recently, the local federal court approved its plan to scale back the secondary treatment plant, which will save ratepayers $165 million.

In addition, EPA endorsed a revised Combined Sewer Overflow Plan formulated by MWRA with assistance from the state Department of Environmental Protection and local communities. The new plan is expected to yield as much as $1 billion in savings.

But continued federal assistance remains vitally important for the Boston Harbor Project. The cleanup has passed some important milestones already -- it has reduced harmful metals dumped into the Harbor from 3,000 pounds a day in 1984 to 500 pounds a day in 1995. It has reduced the number of beach closings in the area by 50% over the last decade. Residents have reported the return of porpoises and seals to the Harbor's waters, and efforts are again underway to preserve the extraordinary history and natural beauty of the Harbor's 31 islands.

President Clinton has requested $100 million in federal aid for Boston Harbor in FY1997, and I urge the Subcommittee to support that level of funding. This is not a Democratic or a Republican project. Members of both parties have long recognized the crushing burden of this unfunded mandate on the ratepayers in the Boston area.

I am hopeful that Congress will pass a reauthorization of the Clean Water Act before the end of the current fiscal year. Even if the reauthorization is not completed, I urge the Subcommittee to go forward, and ensure that the millions of ratepayers in Massachusetts and across the country will not be left without federal assistance to meet this heavy economic burden.

I also urge the Subcommittee's approval of the President's request for $4.5 million for water projects in Bristol County, Massachusetts. This request will maintain the funding level provided in FY1996 for Fall River and New Bedford, the two major cities in Bristol County. These cities are now implementing court-ordered construction under the Clean Water Act that will cost hundreds of millions of dollars. The communities are plagued by double-digit unemployment, and have not yet recovered from the ongoing economic recession. Water and sewer rate increases continue to threaten remaining major employers in the area, many of whom are engaged in water-intensive industry. Their departure would be devastating to the local economies. The $4.5 million appropriation would provide modest relief and demonstrate the federal government's willingness to bear a share of the burden of these expensive projects.

In addition, I strongly support an increase in the State Revolving Fund, which is a vital source of federal aid for wastewater infrastructure projects across the nation. A substantial increase in the SRF would help communities such as Lynn, Gloucester and the South Essex Sewerage District in Massachusetts, all of which are struggling to cope with rising water and sewer rates as a result of court-ordered projects, and all of which rely on the SRF for federal relief.

Under the leadership of Governor Weld and the state legislature, Massachusetts is doing its part. In recent years, the state has gone well beyond the required minimum match for the SRF. It has also committed additional revenues -- $27 million in Fiscal Year 1994, $40 million in Fiscal Year 1995, $40 million in Fiscal Year 1996, and an expected $47 million in Fiscal Year 1997 -- for debt service assistance to the Boston Harbor Project and other wastewater projects across the state. It is essential for the federal government to meet its responsibility as well, in partnership with the state.

Finally, I hope the Subcommittee will continue to support the Buzzards Bay project under the National Estuary Program. This ongoing effort is achieving remarkable progress in protecting and restoring these priceless, nationally recognized environmental resources. It is doing so in a cooperative way that involves many communities working together in Southeastern Massachusetts. Additional modest federal appropriations, leveraged at the state and local levels, will enable them to get the job done.

Thank you again, Mr. Chairman, for this opportunity to testify on these issues before the Subcommittee. I urge your continued support for these projects that are so vital to Massachusetts families, businesses and communities in the years ahead.

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## PREPARED STATEMENT OF MICHAEL D. GERSHON, M.D., THE AMERICAN ASSOCIATION OF ANATOMISTS

Mr. Chairman and distinguished members of the subcommittee, I am Michael D. Gershon, M.D., Professor and Chair of the Department of Anatomy and Cell Biology in the College of Physicians and Surgeons of Columbia University. I appreciate the occasion to testify before your subcommittee on the fiscal 1997 appropriation for the National Science Foundation (NSF) and Veterans Affairs (VA). I do so as President of the American Association of Anatomists (AAA), a society with a membership of 2,400 biomedical scientists. The members of our society, in common with their counterparts in other disciplines, seek to understand the normal function of the body. Our group, however, is unique in that our approach emphasizes space and form as determinants of function. More than any other branch of science, we deal with images. Like most other fundamental biologists, it is our strong belief that knowledge of how the body works, when it works well, makes it possible to understand what is wrong when the body does not work. Cures, we believe, are more likely to be discovered by a logical process based on knowing what produces a given illness, than from spontaneous inspiration or an unfocused trial of exotic herbs and folk remedies. Our members also teach at American medical schools and provide instruction in Anatomy, Cell Biology, Neurobiology, and Human Development.

The funding recommendations of the AAA for the NSF and VA for fiscal 1997 are based on the outcome of a Consensus Conference on Federal Funding in the Biomedical and Related Life Sciences sponsored by the Federation of American Societies for Experimental Biology (FASEB). We are one of the 10 FASEB societies and I represented our society at that conference.

I will first address my remarks to the FY97 appropriations for the NSF. Mr. Chairman, our nation's quality of life, economic competitiveness and ability to meet the challenges of the next millennium depend upon our scientific and technical knowledge base. In the field of basic research into biology, FASEB's area of concern, the BIO directorate has recently:

- Supported fundamental research on micoorganisms, plants and simple animals that has led to important discoveries and unforseen new technologies. The discovery of DNA-cutting enzymes called restriction endonucleases have played an essential role in the entire field of molecular biology and the biotechnology industry that it has spawned.

- Supported research on the molecular genetics of the plant *Arabidosis thaliana* resulted in a number of breakthroughs that will greatly affect agriculture. One of these is the identification of the gene for the ethylene receptor. Ethylene is a plant hormone that stimulates the ripening of fruits. It is likely that in the next few years, this pathway will be used to control fruit maturation.

- Supported investigations of microbial diversity in deep sea vents that led to the commercial development of a heat-stable enzyme (vent polymerase) which is now used in the polymerase chain reaction (PCR). The PCR technique has been used extensively in all types of research in molecular biology. It has had a major impact in gene mapping, biotechnology and forensic medicine.

We believe that the track record of productivity in "investigator-initiated" proposals has been critical for the foundation's success. We therefore recommend that both the size and number of investigator-initiated awards should increase over the next five years at NSF's BIO-Directorate.

The BIO Directorate targets funds for the support of three types of centers: Science and Technology Centers (STCs), Centers for Ecological Analysis and Syntheses (CEAS) and Long Term Ecological Research Sites (LTER). We believe that these centers provide long-term, stable support for interactive and often interdisciplinary groups of investigators who bring a range of expertise to bear on specialized research problems. STC's supported by NSF are conducting research on problems ranging from molecular biology to ecology, creating pathogen-resistant plants, and developing new and sophisticated instruments for biological research. To assure continued vitality of these programs, FASEB supports the recommendation by your committee for an independent review of NSF management of them.

NSF's education and training programs, which enhance scientific education from kindergarten to postgraduate levels, play a critical role in the advancement of fundamental research for the United States. Graduate and postdoctoral training in the biological sciences fosters careers in the national interest. The NSF program supporting predoctoral students, a highly prestigious program, attracts some of the nation's brightest students. We therefore recommend that the NSF predoctoral and postdoctoral fellowship programs should be sustained at its current levels.

Mr. Chairman, if well-trained and talented investigators are unable to continue research because they lack support, if the best and the brightest of our students are turned away for lack of training resources, or if children's curiosity about science is not stimulated, our nation will lose the human capital needed to meet the challenges of the future. The development of productive research scientists requires a generation of effort. Sustained support of NSF programs is a particularly important component of this effort. These programs foster school children's native curiosity in science, promote development of curricular in mathematics and science for elementary and secondary school students, encourage excellence in science teaching at undergraduate colleges and provide high quality research experiences at the graduate and post-graduate levels.

To address all of these issues, FASEB wholeheartedly supports the FASEB position that the NSF Life Science's budget should be increased by approximately 12% to $342 million dollars.

With regard to the Department of Veterans Affairs FY97 budget, Mr. Chairman, clearly our country has the moral obligation to provide the highest quality health care to the men and women who have served our country in uniform. The American Association of Anatomists wholeheartedly supports the stated goal of the VA to enhance the quality of health care for our veterans. We note that during the past year, VA researchers have:

- used the techniques of molecular biology to develop a rapid diagnosis for tuberculosis;
- developed an improved treatment for ulcers related to *Helicobactor pylori* infection using a combined drug regimen;
- conducted important cooperative research which demonstrated the effectiveness of angioplasty in patients at high risk for bypass surgery; and
- conducted studies on the role of some cytokines in mediating the effects of HIV infections.

These efforts have contributed significantly to the recent success of VA research. We support the VA concentration on research which takes advantage of a large patient population, the highest proportion of physician researchers on staff of any Federal agency and an impressive commitment to high quality, merit-reviewed, investigator-initiated research projects. VA research has had an important stabilizing and integrating effect on health care delivery resulting in enhanced patient care and training of scientists and physicians.

The FY1995 VA research budget was approximately $272 million, which included an appropriation of $252 million for VA Medical and Prosthetic Research and a $20 million transfer to the Department of Defense (DOD). The actual amount transferred from DOD was $12.5 million. Most of the Medical and Prosthetic Research appropriation supports the VA Medical Research Service, with total expenditures in FY 1995 of $204.5 million. This budget was sufficient to fund %16 of all new projects, %30 of competitive renewals and %20 of career development applications. Most career development awards went to individuals with postdoctoral or research associate status. Few or no awards went to individuals at the more senior levels.

AAA believes that career development awards to VA investigators at more advanced stages of their careers have played an important role in attracting and retaining outstanding individuals to the VA system. Funds should be provided to continue awards at the senior-level as well.

The budget for VA has not kept pace with inflation. We are missing opportunities to address research issues related to the health of our nation's veterans. Deterioration of the VA research infrastructure, and a growing inability to provide opportunities for research career development are frittering away the important advances made by VA researchers. To reverse this alarming trend and to provide vitally needed resources for the VA research program, AAA urges that a budget of $297 million be appropriated for the VA Medical and Prosthetic Research Program in FY 1997. Our recommendation includes $20 million currently included in the DOD transfer. This translates to a recommended %7.2 increase from FY 1996.

Mr Chairman and distinguished members of the committee, Congress should recognize that as veterans age, the VA requires resources for research on treatment of disorders unrelated to active military assignments. These initiatives are difficult to plan and develop through a Congressionally mandated DOD pass-through mechanism.

Mr. Chairman, all of the issues that I've addressed require dollars from our taxpayers. I know that one does not become popular by asking for handouts of that money. Yet, as an American taxpayer and a scientist, I am very much aware of the need to use the money appropriated more productively. In my opinion Mr. Chairman, the Life Sciences program of the NSF and the research programs conducted by the VA represent the very best investments of the taxpayers' hard-earned dollars. By, investing in the future of basic scientific research, by investing in the health of those who have sacrificed for our country, we assure that our children and grandchildren will inherit their just birthright: a great and humane United States of America.

## PREPARED STATEMENT OF LARRY MC NICKLE, DIRECTOR, AMERICAN ASSOCIATION OF HOMES AND SERVICES FOR THE AGING

The American Association of Homes and Services for the Aging (AAHSA) is pleased to submit for the record our comments on the FY97 Administration budget request for the U.S. Department of Housing and Urban Development (HUD). As you know, AAHSA is the largest national organization representing nonprofit sponsors of senior housing. Our members own and manage over 200,000 units of federally assisted housing and include the largest number of sponsors of HUD Section 202 elderly housing facilities. We are especially interested in the affordable housing needs of older persons and the budget proposals regarding federally assisted housing that affect this special population.

Mr. Chairman, we are particularly appreciative of the strong support and leadership that you and members of your committee have demonstrated over the years to ensure that increasing numbers of elderly are appropriately housed in suitable, affordable, decent and safe housing. Nonprofit sponsors need the partnership and resources of the federal government to provide much needed affordable housing for a truly needy and vulnerable elderly population. We are hopeful that your committee will continue to understand the crucial role that federally assisted elderly housing plays in providing affordable housing for low-income elderly.

As we have previously stated, while recognizing that HUD is a department greatly in need of reform, we lend our voice to those calling for its transformation not its elimination. We believe that a number of constructive actions have been taken; yet, we recognize that additional actions are needed to enable HUD to function more effectively. We believe that part of HUD's mission should be to foster an environment that allows aging seniors to live in housing that maintains their individual dignity and independence. Working as a nonprofit organization in an effective partnership with HUD, we believe that we can help to accomplish this goal. AAHSA firmly believes it is important to recognize that HUD needs adequate resources to accomplish its mission, and there are certain HUD programs -- such as the Section 202 elderly housing program -- that work well and should be preserved and supported.

Unfortunately, while the Administration's overall HUD budget calls for significant increases in certain programs, inexplicably, other housing programs benefiting the elderly suffer reduced funding -- and in certain instances, outright elimination. We agree with Congressman Lazio's (R-NY) recent remark that *"the Administration increased funding for the CDBG program by $300 million and cut $266 million from senior housing. There's something inherently unfair in that equation."* A recent study by HUD shows that of 5.3 million households with worst case housing needs, where residents were spending more than 50% of their income on rent or living in severely substandard housing, almost 1.2 million are headed by an elderly person. According to HUD, *"(a)lmost half (49 percent) of unassisted elderly renters with very low incomes have acute housing needs. Federal housing assistance reaches over one-third of households headed by the eligible elderly, but another one-third have unmet acute needs for housing assistance. Over two-thirds of the elderly with acute housing needs have incomes below 30 percent of median."* Yet, the affordable housing gap between need and supply is increasing. A recent study by The Center on Budget and Policy Priorities indicates that the shortage of affordable housing has reached 4.7 million units, the largest since the early 1970s.

These very compelling issues of affordability and scarcity of supply are of particular concern to nonprofit sponsors of elderly housing. Low and moderate income older persons have limited options for affordable housing, especially when considering that most are retired on fixed incomes. The elderly depend more heavily on Social Security (38%) than any other source of income. The elderly are more likely than other adults to be poor; and much more likely than nonelderly to be "near-poor" (with incomes between poverty and one and a half times poverty level). As evident by exemplary programs in local communities throughout the country, federally assisted elderly housing has been one of America's success stories. Quite frankly, it works. It is cost effective and needs to be recognized as a sound investment. From a federal budget perspective, federally assisted elderly housing needs to be recognized as a valuable tool to address not only affordable housing and local community needs, but also for its role in addressing long-term care needs of increasing numbers of frail older persons. In this context, for FY97, AAHSA is especially concerned with funding for:

- Section 202 Supportive Housing for the Elderly Program;
- Section 811 Supportive Housing for Persons with Disabilities Program;
- Service Coordinators; and
- Modernization and Retrofit

## Section 202 Supportive Housing for the Elderly Program

While we are pleased the Administration recommended that the Section 202 program be maintained as a separate program and not consolidated into a mega-block grant, we are disappointed that the proposed FY97 funding request will not even maintain current funding levels. The Administration proposes to reduce funding for Section 202 from $780.19 million in FY96 for 9,654 units, to $595 million in FY97 for 6,750 units, a reduction of over $185.19 million and 2,904 units. We would recommend that Congress continue to recognize the tremendous benefits of this well-managed program and maintain a funding level to develop at least 10,000 units in FY97. As we have stated previously, increasing growth in the elderly population has resulted in a multi-year waiting list of more than 250,000 elderly, or nearly eight older persons for each available unit, in urban areas than number increases to eleven persons per unit. A recent AARP study indicates that the average older person has been on waiting lists for federally assisted housing for 25 months; 15% for more than 4 years. Over the years, funding levels for Section 202 has diminished from the late 1970s—when over 20,000 units were funded—to the current level of less than half that amount.

We recognize that as policymakers struggle with fiscal restraint, and look for alternative funding sources in a time of budgetary reductions, granting flexibility to Section 202 to leverage the capital advance to attract other financing is an obvious approach to "doing more with less." AAHSA has long advocated that Section 202 be allowed to pursue the "three mixes" - mixed income, mixed financing, and mixed use - in developing elderly housing projects. We are, therefore, supportive of the Administration plan to emphasize this approach and to modify the program accordingly. Similarly, we are strong proponents of services in housing to enable frail elderly persons to remain in their own homes for as long as possible. We are pleased that the Administration proposes to further link Section 202 projects with State and local level supportive service funding streams. We would offer a word of caution that this new emphasis on *"local funding links"* not signal an abdication of the federal role and responsibility in fostering services in senior housing.

Unfortunately, last year during negotiations on the FY95 rescissions, Section 202 was in danger of having its unit level reduced by a cut in the capital advance. Because of the critical shortage in affordable housing, and in recognition of budget constraints, AAHSA concurred on a *"funding cut-for-reform"* proposal. In exchange for maintaining the current unit levels and additional reforms in the Section 202 program, we supported a reduction in the term of the rental assistance contract (PRAC). We also support the Administration's request to restore $200 million in the FY96 Continuing Resolution to extend the PRAC term. In light of a reduced HUD staff to administer the program, we share a mutual interest with HUD to preserve the integrity and reputation for excellence that the Section 202 program has earned throughout its history, and to continue to work on reasonable reforms to ensure that it continues to provide the housing needs for the people it is designed to serve.

**RECOMMENDATION:** *Therefore, we strongly urge you to fund Section 202 in FY97 at an amount sufficient to maintain current unit levels with multi-year rental assistance contracts.*

## Section 811 Supportive Housing for Persons with Disabilities Program

In FY97, HUD proposes to reduce funding for Section 811 from $233.17 million in FY96 for 2,915 units, to $174 million in FY97 for 1,562 units and 1,412 vouchers, a $59.17 million reduction. The budget proposes to set-aside a portion of funding for tenant-based assistance to increase program flexibility to further the objective of "mainstreaming" persons with disabilities in the housing market. In addition, beginning in FY97, the budget proposes to combine Section 811 and Section 202 funding under an account entitled *Housing for Special Populations: Elderly and Disabled.*

AAHSA had previously added its voice to the many disability advocates calling for greater flexibility in the use of Section 811 funds and in encouraging persons with disabilities to be mainstreamed into the housing marketplace. We applaud HUD for encouraging achievement of these goals and for instituting options for tenant-based assistance. However, we are disappointed that HUD did not go far enough. Reducing funding is contrary to the goal of expanding housing choices for persons with disabilities. Increasing funding to expand the options for scattered-site housing, vouchers and group homes under the Section 811 program, is the direction that HUD needs to take to help alleviate the significant shortage of housing opportunities for persons with disabilities. Also, as we had argued in previous years during debate over the mixed-population issue, it is counter-productive to link the funding account for Section 202 and Section 811.

**RECOMMENDATION:** *We urge you to provide sufficient funding for Section 811 in FY97 to enable current unit levels and the option for tenant-based assistance, while keeping funding for the Section 811 program separate from funding for Section 202.*

## Service Coordinators

There is a recognition in the long-term care arena that *"you can't have good health without good housing."* One of the tools to provide good housing for older persons is to facilitate linkages with supportive services through service coordinators. The importance of service coordinators in federally assisted elderly housing was a dominate recommendation at last year's White House Conference on Aging. AAHSA commends the actions taken by this Committee to provide funding for service coordinators in federally assisted elderly housing. Unfortunately, earlier this year, previously appropriated FY95 funds for service coordinators were rescinded. As in FY96, the Administration chose not to recommend Section 8 funding for service coordinators in FY97, but rather to reduce and fold this funding into block grants. Specifically, the Administration recommends that $53 million of CDBG funds be used for a host of activities, including service coordinators. It is our understanding that these funds will not realistically be available for federally assisted elderly housing, but are principally for the benefit of public housing residents. We believe that the Administration continues to miss an opportunity by failing to recognize the critical role that service coordinators provide to frail, vulnerable elderly persons in senior housing settings. In addition, the dramatic movement of managed care organizations into long term care is reflective of the future trend of serving seniors and other vulnerable persons in the most cost-effective setting possible, e.g., senior housing. Service coordinators serve as a crucial link to effective delivery of home and community-based services.

While we appreciate the administrative gains that have been made with the Administration in allowing service coordinators to be funded as a part of project operations through a rent increase or through excess residual receipts, most of these gains were the result of impetus from this Committee. As a result of your Committee's prodding of HUD, many existing elderly housing projects are now able to take advantage of this expanded use of residual receipts or are able to request rent increases through their regular project budget process. However, there are many other projects that also have a critical need for service coordinators that do not have adequate reserve funding (through excess residual receipts) or whose residents cannot absorb the extra costs associated with a rent increase It is for these projects that service coordinators need to be funded as a separate line item in the appropriations bill.

**RECOMMENDATION:** *We strongly urge you to provide Section 8 funding for service coordinators in FY97 to meet the needs of existing elderly housing projects that cannot support a rent increase or are lacking in reserves.*

## Modernization and Retrofit

Many nonprofit-sponsored federally assisted elderly housing facilities are aging and have critical capital improvements needs for modernization and retrofitting. Many of these facilities require retrofitting of community space and individual units to accommodate the needs of aging residents for the delivery of supportive services to help them to remain in their homes. Delivering services in housing is an awakening giant, particularly with the growing movement of managed care organizations moving into housing, and facilities will require retrofitting to accommodate the explosive growth of residents who are aging in place. Since 1990, the Congregate Housing Services Program (CHSP) has included a retrofit component to allow projects to modify, renovate, and modernize their physical plant to accommodate supportive services for their frail elderly residents. Because HUD had failed in past years to issue guidelines on the retrofit program, the Committee as recently as 1994 urged HUD to implement the program to allow facilities to accommodate the physical space needs of aging residents. AAHSA strongly supported this action taken by the Committee. In FY95, HUD was prepared to implement retrofit under a limited demonstration program when the pressures of rescission intervened. Although CHSP survived the first FY95 rescission -- and actually was the only housing program to have its funds restored on the House floor -- the second FY95 rescission took away enough funds from the program to prevent implementation of the retrofit program. The present Administration proposal does not request funding for CHSP in FY97, further eliminating the possibility for implementing retrofit. Lacking an available funding source, and with the elimination of funding for the Flexible Subsidy program -- the only other HUD program devoted to funding the modernization needs of existing assisted housing facilities -- the pressure for modernization and retrofit will dramatically increase. For these reasons, AAHSA has advocated that Section 236 projects be allowed equitable access to their excess rents, to retain the excess funds from rents generated by their individual facilities that are presently returned to HUD, for their project's use.

**RECOMMENDATION:** *AAHSA urges the Committee to restore funding for CHSP in FY97 at the pre-rescission FY95 level, to direct HUD to implement the retrofit program, and to allow Section 236 elderly projects to retain excess rents for modernization and retrofit needs.*

We are pleased to be able to contribute to the committee's deliberation on these critical issues and thank you for this opportunity to offer testimony on the FY97 HUD budget. We hope that our comments will assist in helping you formulate a budget that is responsive to the increasing needs of very-low-income elderly, and we urge your support for the recommendations as outlined in our testimony. If you desire additional information, please contact AAHSA staff member, Gerard Holder (202-508-9476).

## PREPARED STATEMENT OF THE AMERICAN ASSOCIATION OF RETIRED PERSONS (AARP)

The American Association of Retired Persons (AARP) appreciates this opportunity to comment on the Administration's FY 1997 budget proposals for programs which affect the lives of many low income older Americans. Our specific recommendations can be summarized as follows:

**Provide sufficient funds for Sections 202 and 811 Housing Programs in order to continue current production levels of project-based assistance to older persons and persons with disabilities;**

**Provide to public housing authorities the resources necessary to develop and adapt alternatives to elderly housing for younger individuals with disabilities. Designate at least 5,000 vouchers for persons with disabilities and target them to housing authorities most affected by the "mixed population" problem;**

**Appropriate sufficient resources for Low-Income Housing Preservation;**

**Provide sufficient funds for the Housing Counseling Program which is under statutory obligation to provide counseling to reverse mortgage consumers;**

**Provide at least the $53 million requested for Public Housing Supportive Services.**

## FULFILLING THE PROMISE TO SERVE OLDER PERSONS AND PERSONS WITH DISABILITIES

The Association appreciates the Subcommittee's long-standing support of programs which benefit older Americans. The painful decisions involved in constructing the fiscal year 1996 appropriations bill and in addressing the Administration's pending budget proposals reflect a growing consensus that: (1) housing programs must undergo rigorous scrutiny and reform, and (2) fiscal constraints are likely to dictate much of the direction of that reform. Despite policy differences that will undoubtedly be debated at great length this year, nearly all parties agree that the time has come to weed out ineffective programs, wasteful bureaucratic structures, and counterproductive regulations. Entrepreneurial government and rewarding success have become the new themes of housing policy discussions.

As the debate continues, AARP believes that it is also important to remember and reward existing programs that work, including elderly programs. Relevant parties in the public and private sectors have all acknowledged that elderly housing programs work well for older persons with low incomes. Reforms passed in the 1990 Housing Act are now producing some of the finest Section 202 projects ever developed under the program. The Association is mindful of the need to produce housing as cost effectively as possible with a much diminished HUD field staffing level, and we stand ready to work with the authorizing committee in that regard. Included with the Administration's current budget request for Section 202 are legislative improvements "to emphasize mixed-use, mixed-income and mixed-financing and to link elderly developments closer to existing and proposed supportive service funding streams at the State level." While the Association can appreciate the recommended modifications, we are concerned that administrative changes authorized earlier regarding Section 202 may have the effect of defunding the reserves that are so critical to the long term maintenance of projects. Pending any changes to the existing program, we urge that funding be provided to allow for current production levels next year.

AARP further urges that a minimum of 5,000 vouchers be designated to fund the tenant-based assistance program for persons with disabilities authorized in the Housing and Community Development Act of 1992. We recommend that these vouchers be targeted to public housing authorities (PHAs) which have been most affected by problems that have occurred as the result of housing the disabled with the elderly. PHAs need these resources along with additional development and modernization funds in order to meet the challenge of providing real housing alternatives and choices to younger persons with disabilities.

One of the thorniest issues to face FHA and policy decision makers is the restructuring of the current inventory of FHA-insured housing, much of which also has rental assistance under Section 8 or other programs. Amid reports of poor quality housing provided at rents well above market in some cases, the Administration has proposed a plan to impose more market discipline on the current stock. This proposal involves "marking to market" the properties and converting the rental assistance to tenant-based assistance as project-based - assistance contracts expire. The logic of this argument is that both quality and price should improve as housing providers are subjected to the competitive pressures of the market place.

Unfortunately, the Administration's plan leaves many questions unanswered-- and the answers will be critical in evaluating whether or nor the risks inherent in this approach are worth taking. Because a very high percentage of the Section 8 projects are elderly projects -- especially those whose terms are expiring in the next few years -- the risk is very high indeed. In fact, the great majority of elderly projects are working very well. The burden of proof, therefore, is very high in demonstrating that the outcome of the dramatic changes proposed is likely to be substantially better than more modest improvements to the current system. Pending legislative change, AARP recommends that sufficient resources be provided to continue extending assistance contracts as provided under existing law.

## PROMOTING THE INDEPENDENCE OF FRAIL OLDER PERSONS

AARP supports the proposed $53 million set-aside for public housing supportive services within the funds allocated for modernization. These resources may be used, if desired, to provide nonmedical, congregate services to the frail elderly as well as for Service Coordinators. The Administration's budget request continues the policy approved earlier by Congress in the regular appropriations bill --- namely, deleting the Congregate Housing Services Program (CHSP) and Service Coordinators as separate appropriations and folding them into a block grant along with other programs.

Service coordinators have proven their value as part of the management team in elderly housing projects. The need for such coordinators is especially acute in public housing projects for the elderly which often include large numbers of residents with mental and physical disabilities. AARP believes that the cost for such personnel should be made part of routine operating expenses of elderly housing projects. We recommend that HUD be encouraged to fund them as part of operating budgets.

AARP recommends that sufficient funds be made available next year for housing counseling which is under statutory obligation to provide independent counseling to older homeowners who seek FHA-insured reverse mortgages. These mortgages allow older homeowners who are "house rich but cash poor" to tap into the equity in their homes to pay for meeting basic needs.

AARP supports the President's budget proposal for programs administered by the Corporation for National and Community Service. Older Americans are not only participants in programs like AmeriCorps, but recipients of its community-based services as well. And many older persons participate in programs as mentors and tutors to youngsters in schools across the nation. These valuable activities foster civic responsibility and strengthen the cords that bind us as a people.

Thank you again for this opportunity to comment on some of the Administration's budget proposals for fiscal year 1997.

# PREPARED STATEMENT OF RONALD BRESLOW, PRESIDENT, AMERICAN CHEMCIAL SOCIETY

April 29, 1996

In today's constrained fiscal environment, strong bipartisan support for basic research and education at the National Science Foundation (NSF) must be maintained. Few agencies within the federal government contribute more to the future vitality of the Nation than NSF. The integrated research and education programs in the sciences and engineering supported by the Foundation spawn new knowledge, creative approaches to teaching and learning, and well-trained researchers. NSF enables the future through lower-cost, more effective, and more efficient discoveries and processes, and improved science and engineering curricula for our Nation. As a Nation, we must give the Foundation our fullest support. ***The American Chemical Society, therefore, endorses the Administration's budget request of $3.32 billion for the National Science Foundation.***

## Research and Related Activities

By supporting world-class, peer-reviewed research across the spectrum of scientific and engineering disciplines, NSF nurtures the ideas that become tomorrow's breakthrough innovations. The recent celebration of the 50th anniversary of the first manufactured electronic computer, ENIAC, in a year dominated by the Internet (a system supported for years by NSF before its recent explosive popularity) offers some perspective on the long-term benefits of basic research. Similarly, as the incredible growth in demand for advanced composite materials or for biotechnology indicates, new, previously unimaginable markets are being developed through the type of long-term research NSF supports.

In addition, the pillars of traditional industrial sectors rely heavily on creative, well-educated employees to increase effectiveness, efficiency, and value. The chemical and allied products industry, for example, has produced a positive balance of trade for more than forty years, and in 1995 posted a $20.4 billion surplus on total exports of $60.8 billion. Success such as this is grounded, in large part, in the continuing flow of new ideas, knowledge, and skilled researchers supported by the Foundation.

NSF's Research and Related Activities (R&RA) account supports direct training experience that is essential for the development of creative and productive chemical scientists and engineers. For example, the Grant Opportunities for Academic Liaison with Industry (GOALI) initiative allows graduate students, university faculty, and industrial scientists the opportunity to collaborate and foster synergistic links between industry and academe. Additionally, over its average grant life of thirty-six months, the typical grant from NSF's Chemistry Division supports one undergraduate, four or five graduate students, and one or two postdoctoral fellows. Further, through the Research Experiences for Undergraduates (REU) Program, R&RA ensures that even more undergraduates are afforded the opportunity to participate in research activities. The Chemistry Division alone will support more than 600 students at 55 REU sites in 1996.

In addition to developing tomorrow's scientists and engineers, R&RA support enables advances in scientific and technological innovation in areas that are of national importance. For instance, research across the chemical sciences will affect high performance computing and communications; advanced materials and processing; advanced manufacturing technology; biotechnology; the environment; and science, math, engineering, and technology education. A unique facet of much of this research is the integration of several disciplines to address these challenges. Biotechnology, for instance, incorporates chemistry, biology, advanced materials, and computer science to rationally design drugs or develop new artificial biosurfaces for human biomedical implants. While it is difficult to precisely measure the financial returns on such investments, past research in other areas such as fiber-optic cables and the semiconductor chip testify to the value of this fundamental, multidisciplinary approach.

Similarly, programs such as NSF's Environmentally Benign Chemical Synthesis and Processing Initiative are supporting fundamental research that will lead to cleaner and more efficient industries producing chemicals, pharmaceuticals, plastics and fibers, electronics, agricultural products, and energy —products that strengthen the economy and improve the quality of our lives. A concomitant benefit of the environmental research supported at NSF is the education and training of future environmental scientists and engineers.

The Foundation's commitment to competitive, peer-reviewed research excellence has played a crucial role in fostering creativity and knowledge in the chemical sciences and technologies that strengthens our economy and improves the quality of our lives. The Administration's FY 1997 request for NSF demonstrates a strong commitment to research and education in the sciences and engineering. ***Consequently, the Society strongly endorses the Administration's request for an 6.8%, or $158 million, increase over the FY 1996 level for the R&RA account to continue this outstanding re-***

***cord of discovery and success.*** While this increase is substantial at first glance, the request for R&RA has two components: instrumentation and research. $108 million of this increase will further the Foundation's support for world-class, peer-reviewed research. The remainder of the request, $50 million, reflects the shift of instrumentation funding from the Academic Research Infrastructure account into division-level instrumentation programs.

## Research Infrastructure

Instrumentation is often the key to ground-breaking research, brilliant insights, new applications and technologies, and is necessary for the optimal training of the next generation of scientists. Access to modern instrumentation is an essential component of any successful program in fundamental research. It is the tool by which scientists and engineers advance scientific and technological knowledge. Researchers and technicians use instruments such as nuclear magnetic resonance (NMR) spectrometers and mass spectrometers many times a day to perform routine chemical analyses quickly, accurately, and efficiently; analyses that once would have taken trained individuals weeks or months to complete if they were possible at all.

The FY 1997 budget request for NSF would eliminate the Academic Research Infrastructure account by (1) terminating a $50 million program for facility construction and (2) shifting the remaining $50 million for instrumentation into the R&RA account. ***The ACS supports the changes in instrumentation support as a means of increasing the efficiency, the continuity of support, and the cost-effectiveness of the instrumentation-research relationship.*** Further, the Society applauds the collaborative instrumentation award effort between NSF and the National Center for Research Resources at the National Institutes of Health as an innovative, cost-effective approach to reducing the backlog of infrastructure needs and eliminating redundancies in research support.

## Education and Human Resources

***The American Chemical Society advocates the 3.3% increase for the Education and Human Resources (EHR) account to a level of $619.0 million.*** However, the Society is disappointed with the $375.4 million request for the precollege education accounts, which is only a 1.8% increase over the FY 1996 estimate. As the Nation moves into standards-based science and mathematics education for pre-college students, more funds are needed to maintain, if not accelerate, the momentum for reform to improve our competitiveness in a global market.

The Society was involved, with many other professional groups, educators, and employers, in the development of the National Science Education Standards. The ACS will continue to use its own existing programs and funds to help implement these Standards. Given the time and effort that the Country has expended upon their development, the Society regrets the apparent de-emphasis on National Standards implementation that appears throughout the EHR budget submission.

The ACS continues to have reservations about the rate at which the Educational System Reform Subactivity is becoming an ever more significant component of the total EHR budget. A clear need exists for systemic reform of pre-K through 12 education; the Society has strongly supported the general direction of this effort since its inception. However, we continue to question the granting of additional awards, whether as extensions to currently funded Statewide Systemic Initiatives, or as new awards to eligible Urban and Rural Systemic Initiatives, without strong evidence of their achievements The evaluation of the State Systemics is ongoing; the evaluation of any of the Urban and Rural Initiatives has yet to take place. Yet, the rate at which the Subactivity is growing (6.8% versus total EHR growth of 3.3%) precludes the use of evaluative data from one program being used to guide the deliberations and development of another. Considering the timing of these evaluations, the Initiatives cannot effectively learn from each other's mistakes and successes.

Teachers are the agents of educational reform; educational systems are functioning in an appropriate fashion when they support the innovative, appropriately educated teacher leader. The ACS is impressed by the reported successes of some of the Local Systemic Change projects, which are implementing reform by targeting the professional development needs of all science and mathematics teachers in entire school systems. Thus, the Society endorses an increase beyond the 0.5% proposed in the FY 1997 request for the Local Systemic program, which funds teacher enhancement within the Elementary, Secondary, and Informal Education Subactivity.

Not only technicians, but a large percentage of future BS scientists start their tertiary education in two-year institutions. For economic reasons, more and more students are being forced to begin their higher education in two-year institutions. It is surely in the national interest to provide special support for both technician training at two-year colleges and for programs from which students will later transfer to attend a four-year college or a university. Consequently, the ACS continues to support the Advanced Technological Education (ATE) initiative that seeks to improve the education of technicians working primarily through two-year colleges. However, as the budget request makes little mention of two-year colleges except within the ATE program, the Society hopes that this is not an indication of a decrease in support for two-year institutions.

The ACS is disappointed with the continued lack of funding for the Dissemination component within the Research, Evaluation, and Communication Subactivity. Dissemination of evaluative NSF studies helps other projects learn from past successes and failures and improves the cost-effectiveness of these programs. However, the Society strongly agrees with the significant 29.2% increase for FY 1997 in support for Evaluation.

The American Chemical Society also endorses the increase in the Division of Undergraduate Education programs for both Curriculum and Laboratory Development, and Teacher and Faculty Development. It is unfortunate that the increase for the Institution-wide Reform of College and University Undergraduate Education is taking place at the expense of both Course and Curriculum Development, and Instrumentation and Laboratory Improvement. Ironically, the two programs targeted for a decrease—presumably to support larger systemic programs which are still unproven—are programs where, through the small-grant mechanism, innovative ideas (relevant across institutions) frequently emerge.

Finally, the proposed funding increase for graduate education is necessary if the Nation hopes to maintain our international position of excellence in training the next generation of researchers. The intellectual contributions of our graduate and post-doctoral students will ensure our technological leadership in the global economy well into the next century. The new science education postdoctoral program, although small, is an innovative step in the right direction.

## Summary

In summary, the American Chemical Society strongly supports the proposed 6.8% increase in the R&RA account and the elimination of the Academic Research Infrastructure program in order to integrate research instrumentation support at the division level. In addition, the Society has specific concerns about the lack of support for standards-based initiatives in science and mathematics, the decrease in support for pre-college education, the lack of significant attention to two-year institutions with the exception of the ATE program, and the increases in systemic reform programs without proper evaluation.

The ACS welcomes the continuing support of Congress in extending the critical record of NSF-supported achievement in U.S. science and technology. As in the past, the American Chemical Society would be pleased to assist you in any way possible to ensure that the Foundation remains a strong force in the United States' science and technology enterprise.

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April 30, 1996

As the Subcommittee on VA, HUD, and Independent Agencies considers FY 1997 funding for the Environmental Protection Agency, the American Chemical Society (ACS) would like to register its support for the Agency's research and development activities. ***The ACS recognizes the budget pressures facing Congress but believes that the investment in EPA's R&D activities should be at a minimum the proposed $578.8 million for the Science and Technology (S&T) Account and $42.5 million for Superfund research. Funding at a level higher than the $621.3 million combined total for the S&T program in FY 1997 would best serve the national interest.***

The Environmental Protection Agency is strengthening in-house resources and extramural activities. Both are critical areas for producing the sound science and advances in risk assessment and management that should drive the regulatory process. EPA already faces tight resources, however, and the Agency's Office of Research and Development (ORD) would like to tap more into the greater external community of environmental scientists and engineers in order to create an extensive, quality knowledge base for environmental decisionmaking.

In addition, the Office is committed to balancing short-term research needs with the pursuit of long-term, fundamental research. The January 1995 EPA Science Advisory Board Report, ***Beyond The Horizon: Using Foresight To Protect The Environmental Future***, recommends that as much attention be given to identifying and preventing future environmental problems as to controlling current ones. If ORD is to pursue these activities, the Agency must be given adequate fiscal and human resources, and the flexibility to utilize them. The proposed FY 1997 funding for the ORD program does not meet these needs since it is about 5.7% below the comparable FY 1995 rescission figure of $535.6 million.[1]

EPA already engages the greater research community in an expanded extramural, peer-reviewed grants program. The Agency supports graduate students through a competitive, research-oriented fellowships program. These programs are part of **STAR**, "Science to Achieve Results." Research areas identified for **STAR** grant solicitations enlarge the science base in support of EPA's mission, and provide incentives for scientists and engineers to align their R&D efforts with the Agency's priorities. These programs provide opportunities for students to participate in cutting-edge research targeted to high-priority environmental needs, as well as to develop an interest in environmental research careers. ***Consequently, the ACS fully supports EPA's proposed $115 million budget for these extramural research-based programs.***

Using its draft strategic planning process, ORD established priority research areas such as endocrine disruptors, the role of interindividual variation in human susceptibility to cancer, risk-based decisions for contaminated sediments, and bioremediation. Among other research areas identified for funding are risk assessment methods, children's exposure to pesticides, hazardous air pollutants, and drinking water disinfection. Depending on available funding, EPA will support research in these areas to gain a better understanding of potential environmental problems and to develop possible solutions. Reducing uncertainties associated with risk assessment and the reduction of risks to human health and ecosystems is a integral part of this research.

ORD is just beginning to catalyze cooperative research and leverage resources with other government agencies. Bioremediation research funding, for example, is a cooperative announcement with the Department of Energy, the National Science Foundation, and the Office of Naval Research. The Agency leverages its other resources through activities such as acquiring measurement data from other government agencies and seeking advice from the greater extramural community on its draft ORD strategic plan.

EPA is continuing to upgrade its in-house science activities. Well-trained scientists are required to perform state-of-the-art intramural research and to manage extramural and contractor activities proficiently. Funds must be provided for an adequate career path for scientists within EPA, the continuing education of these scientists, and the upgrading of Agency laboratories. Sustaining EPA's current activities is especially difficult. The protracted FY 1996 budget process has hurt R&D in the Agency. EPA's in-house research and contractor work has been disrupted or delayed. Data and resources were lost as measurements were not conducted. Tests of environmental technologies, under the Superfund Innovative Technology Evaluation (SITE) program, were delayed. Under this budget uncertainty, young talented professionals have left or are leaving the Agency. These individuals are the very employees deemed essential to build internal capabilities and carry the Agency forward into the future.

Attention must be given to two other areas conducting environmental science research--the National Institute of Environmental Health Sciences (NIEHS) Superfund Program, and the Agency for Toxic Substances and Disease Registry (ATSDR). The NIEHS Superfund Program involves competitively awarded, multidisciplinary research projects that explore and address solutions to Superfund problems, including expanding the knowledge base needed for health risk assessment and providing training opportunities. Among ATSDR's mandated responsibilities are the conduct and review of health assessments at National Priorities List sites, drafting toxicological profiles, and funding studies to define the association between exposure and adverse health effects. ***The ACS supports adequate funding for these research-related activities from the Superfund Account only with the assurance that there will be coordination and consultation among these agencies. For FY 1997, NIEHS Superfund research activities should be funded at least at the FY 1996 appropriated level of $32 million. ATSDR should be funded at least at the requested level of $58 million.***

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[1] Comparable ORD figures are obtained after removing the Working Capital Fund, a component of the FY 1997 request, and the costs of the program office laboratories from the Science and Technology Program, which includes Superfund research.

In summary, ***the American Chemical Society believes that the Subcommittee should assign the highest priority for funding to EPA's R&D activities and resources within the Agency's appropriation as this action will best serve the national interest and the Agency's mission.*** If the Environmental Protection Agency is to anticipate pollution problems and provide for their prevention, rather than simply regulating and cleaning pollution once generated, effective utilization of both in-house and extramural R&D resources is essential. Preference for adequate funding and future growth for EPA's R&D activities should be given, even if the increase comes at the expense of other Agency programs. If cuts need to be made in EPA's overall budget, funding for R&D must be protected.

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## PREPARED STATEMENT OF THE AMERICAN HEART ASSOCIATION

The American Heart Association is committed to the reduction of disability and death from heart attack, stroke and other cardiovascular diseases. In carrying out this mission, the AHA works closely with federal agencies responsible for research, education and prevention programs.

The AHA's FY 1997 funding recommendation for the Department of Veterans Affairs Medical and Prosthetic Research program follows. Our statement focuses on two components of this program Medical Research and Rehabilitation Research and Development.

Despite progress, heart attack, stroke and other cardiovascular diseases remain a major cause of disability and America's No. 1 killer of men and women, claiming more than 954,000 lives each year. Cardiovascular diseases account for 1 of every 2.4 deaths in the United States or more than 42 percent of all American deaths. In the United States, someone dies from cardiovascular diseases every 33 seconds. Deaths from cardiovascular diseases began to rise in 1993 after years of decline and may continue to increase.

More than 1 in 4 Americans suffer from cardiovascular diseases at an estimated cost of $151 billion in medical expenses and lost productivity in 1996. In 1993, more than 800,000 veterans suffered from cardiovascular diseases. Costs for patients with cardiovascular diseases grow because we are treating disease with expensive technology, not preventing it. Based on a lifespan of 74 years, cardiovascular diseases accounted for 4.7 million years of potential life lost, followed by cancer (4.4 million years), then accidents (2.6 million years).

The AHA places its major emphasis on research. Since 1949 the AHA has invested almost $1.4 billion in research to increase knowledge about heart attack, stroke and other cardiovascular diseases. More than 31 percent of the AHA's FY 1994-1995 expenditures support biomedical research.

Our ability to combat heart attack, stroke and other cardiovascular diseases correlates directly with the level and quality of overall support for basic and clinical research and prevention efforts. Although the AHA will continue to commit increased resources toward research, larger efforts by the federal government are essential to win the battle against cardiovascular diseases. A significant increase in funding for federal biomedical research is critical to continued progress.

The Department of Veterans Affairs Medical and Prosthetic Research program plays an important role in cardiovascular research and deserves the strong support of Congress. In FY 1995, VA support for research on heart disease was $51 million, accounting for 20 percent of the VA's appropriated budget. VA supported stroke research represented $8.5 million or 3.4 percent of the VA's appropriated budget.

While the primary purpose of the VA health care system is the provision of quality health care to eligible veterans, VA-supported research contributes to the quality of care by bringing talented and dedicated physicians into the VA system. Discoveries from VA-supported research benefit veterans, science and the world's health. VA researchers include many nationally recognized, distinguished scientists and several Nobel Laureates. Several VA investigators have been acknowledged for their work in cardiovascular research. In addition, VA-sponsored investigators provide core faculty support at major medical schools affiliated with VA institutions.

The Medical Research component of the VA Medical and Prosthetic program supports both basic and clinical research, primarily investigator-initiated peer reviewed studies. This component provides funds for the following activities: support of VA-based faculty members (M.D.s or Ph D s) at various stages in their careers, multicenter cooperative studies--a large portion of which are cardiovascular studies--and research equipment. The presence of a VA research program aids the VA. This small, but internationally recognized, highly competitive research program in 1995 directly supported 2,200 investigators with appropriated funds at about 120 VA centers nationwide.

VA cardiovascular research is largely clinical in nature. The VA is a major contributor to this nation's clinical research, playing a unique role in the research community because of its ability to immediately translate research findings into clinical practice.

Recent VA-supported research has produced significant results in the cardiovascular area. These include:

- demonstration that insulin resistance is an independent risk factor for heart disease. Findings from this research may lead to the reconsideration of dietary recommendations for diabetics and may provide new prevention for heart disease in this group;
- discovery that vitamin E prevents the damaging effects of cholesterol on the blood vessels that lead to heart attack;
- employment of Magnetic Resonance Scanning to localize muscle changes in congestive heart failure patients. Results from this research could lead to the development of new drugs to treat both congestive heart failure and muscle pain;
- invention of a simple blood test to help doctors diagnose heart attacks more rapidly, thus saving millions of dollars in hospital costs;
- comparison of key drugs in the treatment of African-American and Caucasian men with high blood pressure, demonstrating superiority of one class of agents in elderly men and in African-Americans;
- illustration that low doses of the blood thinner warfarin can lower the risk of stroke by about 80 percent in patients suffering from an irregular heartbeat; and
- finding that taking one aspirin tablet daily can cut in half the incidence of death from heart disease in patients with unstable angina (chest pain).

Examples of on-going VA Medical Research-funded cardiovascular studies include:

- research on whether lipid (cholesterol) intervention therapy to raise HDL-C or "good" cholesterol reduces the combined incidence of heart disease and non-fatal heart attack in men with known heart disease, low HDL and desirable LDL or "bad" cholesterol;
- analysis of the effects of warfarin versus warfarin plus aspirin in the reduction of death following a heart attack;
- determination of whether the addition of beta-blockers to standard treatment reduces deaths in patients with heart failure. Similar research is evaluating the effectiveness of an antiarrhythmic drug, amidarone, in preventing death of patients with heart failure. Still another study is evaluating the effect of digitalis on death from heart failure, the leading cause of hospitalization of Americans age 65 and older;
- examination of the effects of high blood pressure on coronary circulation to determine how it interacts with the lining of the blood vessels;
- comparison of blood pressure lowered after 6 months of alcohol moderation versus no intervention in non-dependent moderate to heavy drinkers with diastolic blood pressure of 80-99 mm Hg; and determination whether reduction in alcohol consumption can be achieved at 6 months and sustained for two years; and
- conduction of a case control study of the epidemiology of heart attack and lung cancer, focusing on patients who drink alcohol, smoke, and expose themselves to passive tobacco smoke. Their diet and occupational and medical histories will also be examined.

The number of VA research applications has grown slightly over the last five years, but funding cuts and/or inflationary increases severely restrict support for approved applications. For the programs which were reviewed for FY 1996 funding, 20 percent of approved applications were funded. Five years ago, 40 percent of the approved applications were funded.

Total dollars appropriated for the Department of Veterans Affairs Medical and Prosthetic Research have increased $59 million since 1985 at an average annual rate of 2 percent; however, there has been a decrease in terms of constant "1985 dollars" of $40 million.

The President's FY 1997 budget of $257 million for the VA Medical and Prosthetic Research program is a flat line budget from the FY 1996 appropriation and is identical to the FY 1996 budget request. The President's budget represents a 3.7 percent cut when adjusted for biomedical research inflation.

Enactment of the President's budget of $257 million would result in less than current services for the VA Medical and Prosthetic Research program. Under the President's FY 1997 budget, the VA would be forced to reduce 145 programs below the FY 1996 number. The total number of funded programs would fall from an estimated 1,743 in 1996 to 1,598--an 8.3 percent reduction by the end of FY 1997. From 1992 there will be a reduction of more than 540 research programs, an approximate 25 percent cut, because budgets have not kept pace with current services.

The VA's ability to fund new initiatives and other important medical research projects would be severely jeopardized by the level of funding proposed by the President. The Medical Research programs highlighted below would be adversely affected.

- Investigator-Initiated Studies: During FY 1996 this program will constitute 70 percent of the Medical and Prosthetic Research appropriated budget and will support an estimated 1500 investigators. Under the President's 1997 budget, this program would not receive an increase from the FY 1996 appropriated level. This proposed budget will result in a loss of 113 programs. These investigators comprise the core of all VA research and provide the preceptorship for career development awardees.

- Cooperative Studies: In FY 1996 this program supports 35 clinical trials. The VA offers a unique opportunity for cooperative studies due to close linkage among hospitals. These studies provide a mechanism by which research on the effectiveness of diagnostic or therapeutic techniques can achieve statistically significant results by pooling data on patients from a number of VA hospitals. Proposals developed by teams of VA clinicians and biostatisticians are evaluated by the Cooperative Studies Evaluation Committee. Many landmark clinical trials in the cardiovascular field (e.g., studies in high blood pressure treatment and coronary artery bypass surgery) have been supported by the VA under this mechanism. Under the President's FY 1997 budget, this program would receive a $1.6 million decrease from the FY 1996 appropriation.

- Career Development Awards: Applications for these awards are reviewed both locally and by the VA Central Office. This program has experienced a decrease in the number of awards by 175 percent over the past 5 years to the point during FY 1996 and FY 1997 that very few appointments will be made. The President's budget recommends an eight percent decrease in this program from the FY 1996 appropriation.

These proposed funding levels are short-sighted because of their negative impact on the entire VA Medical and Prosthetic Research program. Moreover, VA cardiovascular research represents an integral part of the overall scientific effort in this field. The AHA is keenly aware of the need for fiscal restraint, but more importantly, we are concerned about the potential negative long-range effects on this nation's health if biomedical research programs do not receive resources for significant growth.

We advocate the recommendation of the 1990 VA Advisory Committee for Health Research Policy that the VA Rehabilitation Research and Development component of the VA Medical and Prosthetic Research program be "expanded to include cardiovascular, neurologic, psychiatric, and geriatric rehabilitation research to enhance the VA's effectiveness in rehabilitating veterans whose needs are psychosocial or physical rehabilitation while complementing the outstanding investigative efforts already underway in prosthetics and orthotics." With a rapidly aging veteran population, an expansion of the RR&D program into heart attack, stroke and other cardiovascular diseases is imperative.

The VA's planning models recognize that its aging patient population demands more care. By the year 2000, the percentage of veterans over 65 years of age will be about three times that of the general population or 38 percent. Elderly people are at greatest risk of heart attack, stroke and other cardiovascular diseases. Cardiovascular diseases remain the leading cause of death of older Americans and a main cause of disability. The greatest gain in reducing cardiovascular disease risk and cardiovascular diseases will be made in the elderly population in the near term if proper research efforts are made.

An estimated 300,000 Americans age 65 and over are in nursing homes as a result of limitations from chronic cardiovascular diseases, including about 180,000 due to stroke. Age is the single most important risk factor for stroke. About 72 percent of stroke victims are age 65 or older. Stroke is the major source of adult physical and mental disability in the United States and the second most common cause of dementia behind Alzheimer's disease. The combination of Alzheimer's disease and vascular dementia is one of the most common disease conditions leading to long-term care needs for the elderly.

Today's investment in biomedical research will lead to future returns, including continued decreases in death rates from heart attack and stroke, reduced federal outlays for hospital and long-term care expenses, a well-trained cadre of biomedical researchers and a more healthy and productive society.

**The American Heart Association recommends an FY 1997 appropriation of $270 million for the VA Medical and Prosthetic Research program. Our recommendation, consistent with that of the Friends of VA Medical Care and Health Research, is based on a current services budget for FY 1997 and a small amount for new initiatives. An FY 1997 appropriation of $270 million for this program would continue current research momentum in cardiovascular diseases within the VA and help to maintain the VA's vital role in the overall scientific effort in this field.**

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## PREPARED STATEMENT OF JOHN VITIKACS, ASSISTANT DIRECTOR, NATIONAL VETERANS AFFAIRS AND REHABILITATION COMMISSION, THE AMERICAN LEGION

Mr. Chairman and Members of the Committee:

The American Legion appreciates the opportunity to present its views on the Administration's proposed budget for the Department of Veterans Affairs (VA) for Fiscal Year (FY) 1997.

For FY 1997, President Clinton has requested $39.3 billion for the programs and operations of the Department of Veterans Affairs. The proposal represents an increase of $794 million over the FY 1996 budget estimate. The proposal provides for selective programs and functions as follows:

### FISCAL YEAR 1997
### DEPARTMENT OF VETERANS AFFAIRS BUDGET PROPOSAL

| | Proposed FY 1997 | American Legion Recommendation |
|---|---|---|
| Medical Care | $17 billion | $20.5 billion |
| Medical Research | $257 million | $290 million |
| Construction | $480 million | $750 million |
| State Home Grants Program | $40 million | $75 million |
| National Cemeteries | $77 million | $78 million |
| Veterans Benefits Administration (GOE) | $800 million | $643 million |

### MEDICAL CARE

The American Legion is pleased that the President has proposed an increase in FY 1997 funding for VA medical care. The proposed increase is necessary so that basic inflationary costs are accommodated. The proposal reflects a medical care funding increase of 2.7 percent above the FY 1996 conference level. The majority of the proposed funding increase will be redirected from acute inpatient programs and toward outpatient care, long-term care, psychiatric and rehabilitative care.

Mr. Chairman, this Committee is fully aware of VA's budget predicament. Recent VA medical care budget increases have not kept pace with medical inflation. If VA had received the average rate of funding growth as measured by the medical consumer price index between 1980 and 1996 (an average increase of 7.8%), its medical care funding today would be $18.8 billion, or $2.3 billion above the FY 1996 Conference level. Allowing for a lower medical care consumer price index of 5 percent for 1996, VA's FY 1997 medical care budget would still require approximately $20 billion.

Mr. Chairman, there is room for additional efficiencies within VHA. The recent development of the Veterans Integrated Service Networks (VISNs) can help achieve these efficiencies. Each VISN has the potential of reducing administrative and clinical duplications. However, by themselves, the VISNs cannot achieve all necessary VHA restructuring. To do so will require Congress to provide VHA the authority to decentralize and promote outpatient care.

Current law does not promote the efficient use of resources to treat veteran patients. The revision of existing eligibility rules and regulations must be realized to achieve the best use of available resources. This authority is very much needed if VHA is to restructure its delivery system to provide state-of-the-art and cost effective health care. Once accomplished, facility renovations must be funded, as necessary, to promote the efficient and effective use of ambulatory and primary care.

## MEDICAL AND PROSTHETIC RESEARCH

The American Legion recommends appropriations of $290 million for VA's distinguished medical and prosthetic research programs for FY 1997.

VA is the only entity directly involved in research activities related to veterans' medical maladies. It is extremely important for VA to continue its cutting edge research studies in areas related to Persian Gulf illnesses, atomic veterans, PTSD, mental illness, geriatrics, women veterans, AIDS, prosthetics and rehabilitation, and so forth.

The American Legion supports the in-house review of VA research priorities currently underway. To our knowledge, the research service review, directed by the Under Secretary for Health, has not been previously accomplished.

Though we have not been fully briefed on the review, we understand the focus is different from the previous VA Advisory Committee for Health Research Policy study, which issued its report in August 1991. That report focused on several vital aspects of VA's research program and determined the program was seriously underfunded, among other conclusions. The current review will help determine the future emphasis of VA research programs, from a policy perspective. We commend Dr. Kizer for this initiative.

## CONSTRUCTION

The President's proposed FY 1997 construction budget of $439 million includes $250 million for major projects and $189 million for minor projects. The VA proposes changing the minor cost limitation from less than $3 million to less than $10 million. Also, VA proposes changing the minor construction appropriation language to allow use of minor construction funding for enhanced-use leasing.

Matching the President's FY 1996 major construction request, the FY 1997 budget proposes the construction of new VA medical centers at Travis Air Force Base in northern California and in Brevard County, Florida. This Committee is well aware of the background issues related to these requests. The American Legion is still of the opinion that both of these facilities are required. We are not aware of any credible analysis which disputes VA's contention that veterans in the two proposed catchment areas are underserved.

### VA/Travis Air Force Base Joint Venture Project

Today, VA operates approximately 53 beds at the Travis AFB hospital. Also, a new VA outpatient clinic has been constructed in the Sacramento area. The main concern for veterans in northern California is access to inpatient care. The Travis facility is unable to adequately accommodate veterans' inpatient requirements. Even though VA facilities at Palo Alto and San Francisco have been designated as inpatient referral centers, veterans need access to a VA facility that is located closer to the community in which they live.

All of the concerns surrounding the need for the proposed Travis facility emanate from the closure of VAMC Martinez in early 1990. At that time the Martinez facility was treating 7,000 inpatients annually. Since the closure of the hospital, the number of veteran patients referred to other VA hospitals has been reduced by half. It appears that the reduction is directly related to access issues.

### Brevard County VA Medical Center

The proposed Brevard County, Florida facility would help to meet the large unmet need for veterans' hospital care in east central Florida, and provide much needed psychiatric beds and long-term care beds for the entire state. The General Accounting Office (GAO) report entitled, Need for Brevard Hospital Not Justified (HEHS-95-192), fails to appreciate the problems faced by Florida veterans, and then offers piecemeal solutions.

The VA has failed to provide sufficient resources to fully employ its health care facilities already in Florida, and build the facilities necessary to extend services to where they are not provided. If GAO had pursued an honest analysis of Florida's circumstances, it would have concluded that a VA facility in east central Florida was required.

Other priority major construction projects include:

### Outpatient Improvements:

Honolulu, HI ($16 million)
Wilkes-Barre, PA ($42.7 million)

### Patient Environment:

Marion, IN (replace psychiatric beds - $17.3 million)
Pittsburgh, PA (environmental improvements - $17.4 million)
Salisbury, NC (environmental improvements - $18.2 million)

### National Cemetery System (new cemeteries):

Chicago, IL ($18.4 million)
Dallas/Ft. Worth, TX ($16.2 million)

### Grants for Construction of State Extended Care Facilities

The budget request for this program for FY 1997 is $40 million. This figure represents a reduction of $7.4 million from the FY 1996 level. At a minimum, the funding level for the program for FY 1997 should be $75 million.

Currently, priority Group I of State Home construction grant requests total approximately $150,000. All Priority Group funding requests exceed $250,000. State Home construction grant requests must be funded at approximately $75 million per year for the next several years to satisfactorily meet the needs of the program.

The American Legion believes the President's proposed FY 1997 State Home construction budget is essential to meet current and future capital facility requirements.

## NATIONAL CEMETERY SYSTEM

The National Cemetery System (NCS) requests a budget authority of approximately $77 million and 1,335 FTE for FY 1997. This is an increase of $4.3 million and 14 FTE over the 1996 current estimate.

Ten additional FTE will address increased wage grade and GS staffing requirements which will result from estimated increases in interment and maintenance workloads. Four additional FTE are required for the activation of the new Tahoma National Cemetery near Seattle, Washington. This cemetery is scheduled to open in 1998.

Mr. Chairman, the FY 1997 NCS budget request is critical to the continued success of the program. There has been no budget increase for NCS operations in the FY 1996 continuing resolutions. With an increase in workload and the total acreage maintained, plus planning for a new national cemetery, the additional 14 FTE increase is essential. Equipment funding remains deficient by approximately $9 million. All told, NCS requires the full additional funding and FTE request for FY 1997.

## Veterans Benefits Administration

The American Legion is very concerned by VBA's proposed reduction of 624 FTE in field station personnel and the impact of the planned restructuring initiatives on the quality and timeliness of its claims adjudication process. This proposed reduction in personnel is predicated on a decrease in the overall workload in the various benefit programs together with increased productivity related to a variety of new and ongoing program changes and computer enhancements.

With regard to the underlying assumptions and data provided in support of VBA's restructuring plan, The American Legion recognizes that despite some cutbacks in personnel, progress has been made in reducing the number of pending benefit claims. By the end of FY 1995, the backlog had declined to 385,000. Much of this reduction was accomplished through the substantial use of overtime funds. However, the proposal for FY 1997 does not provide for similar overtime funding. The impasse on the Federal budget that resulted in two partial shutdowns of VA and lost production time in the 2nd quarter of this fiscal year has caused the backlog of pending claims to grow rather than continue the earlier downward trend. There are currently over 389,000 claims in process.

## Vocational Rehabilitation

Although overall staffing for the Vocation Rehabilitation and Counseling Service (VR&C) will increase by 109 FTE, The American Legion remains troubled by the lack of additional Counseling Psychologists and Vocational Rehabilitation Specialists. VR&C will be facing an increasing caseload and demand for all types of services as a result of the continuing downsizing of the armed forces and the success of the TAP/DTAP programs. Participation in vocational rehabilitation is also expected to increase as a result of the precedent decision by the CVA in Davenport v. Brown.

The American Legion believes there is a critical need for additional personnel funding for the VR&C program. We recommend for FY 1997 an appropriation of $45 million and an additional 100 FTE to improve the timeliness and responsiveness of VA's efforts to assist disabled veterans' reentering the civilian workforce.

## Board of Veterans Appeals

The backlog of appeals awaiting action by the Board of Veterans Appeals (BVA) continues at crisis levels with an average response time at the end of FY 1995 of 763 days. At the present time, there are approximately 12,500 cases physically at the Board in Washington, DC, either in storage, pending review by the veterans service organizations, or under active consideration by a section of the Board. However, there are approximately 58,000 certified appeals being held in the regional offices due to the lack of storage space at the Board. The 1997 budget request includes 50 additional FTE which will enable the Board to improve its response time from 675 days by the end of the current fiscal year and to 545 days in FY 1997.

## SUMMARY

The American Legion appreciates the Administration's effort to present a FY 1997 budget for VA programs and services which reflects an increase of $700 million over the current year estimate. The American Legion realizes that many individuals look at VA, and oftentimes see a large, impersonal bureaucracy, struggling to provide quality service to its veteran beneficiaries.

The American Legion does not accept that VA is failing in its mission, but do believe that a more skillful execution of functions is required. VA is the second largest government Department, administering services to millions of veterans, dependents and survivors. VA is in the process of reforming its benefits and medical service programs, which admittedly require reinvention. The FY 1997 VA budget request will help to continue the vital reforms already underway within the Veterans Health Administration and the Veterans Benefits Administration. However, while these reforms are underway, the quality and timeliness of services provided by VA could further deteriorate without minimally meeting the Administration's FY 1997 budget proposals.

The American Legion has some important concerns regarding the VBA field restructuring proposal. We believe the proposal should be viewed with the same degree of oversight as VHA's recent VISN reorganization. Clearly, the proposal is inconsistent with the intent of section 510, title 38, United States Code. The American Legion strongly supports congressional oversight and budget hearings on the proposal.

Mr. Chairman, that concludes our statement.

## PREPARED STATEMENT OF THE AMERICAN LUNG ASSOCIATION AND THE AMERICAN THORACIC SOCIETY

The American Lung Association remains the nation's premier voluntary health organization committed to respiratory health. Our constituency includes nearly 29 million persons with chronic lung disease. On behalf of these individuals, the American Lung Association wishes to comment on the impact of the proposed FY 1997 funding and programs for the Environmental Protection Agency's (EPA) Air Program. We hope our testimony will encourage you to revisit the merits of a national clean air policy.

The American Lung Association will also provide comment on its support for the Veterans Administration's Medical Care and Health Research program. The research conducted by the agency has had a substantial impact on pulmonary care and treatment through the years. It is clear to the American Lung Association that a dollar spent on veteran's health research is well worth its benefit for all Americans. We hope our comments will foster the Subcommittee's support for this program.

**SUMMARY: FY 1997 VA-HUD FUNDING RECOMMENDATIONS (in millions)**

| | |
|---|---|
| **ENVIRONMENTAL PROTECTION AGENCY** | |
| **Clean Air EPM Programs** | **$365.28** |
| **Air Research and Regulatory Programs** | **182.64** |
| **Radiation EPM Programs** | **24.48** |
| **STAG Air Programs** | **200.64** |
| **EPA/NIEHS Superfund Research** | **51.00** |
| **Environmental Justice** | **4.08** |
| **DEPARTMENT OF VETERANS AFFAIRS** | |
| **VA Medical Care Program** | **$17,500.00** |
| **VA Health Research Program** | **270.00** |

### The Environmental Protection Agency Air Program

For the past 30 years, the American Lung Association's health professional and public health education programs have continued to fight air pollution and improve the quality of the air we breathe. We remain strong supporters of the Clean Air Act and its amendments, and can attest to its significant impact upon nationwide air pollution reduction.

While the EPA has made impressive strides in improving the nation's air quality, substantial deficits in air pollution protection continue to exist. Approximately 50,000 to 120,000 Americans still die prematurely each year from complications associated with air pollution exposure. Air pollution also remains a primary contributor to a high prevalence of respiratory disease, including asthma.

The lungs are in constant contact with the outside world -- interfacing with 8,000 to 9,000 liters of air as we breathe each day. How well or how poorly our lungs perform is contingent upon the quality of the air around us, making the impact of air pollution inescapable.

Source control can significantly reduce the harmful effects of air pollution exposure. Yet pollution reduction cannot be achieved if the proper mechanisms quantifying or evaluating unhealthful air do not exist. While the American Lung Association recognizes the difficult spending decisions this Subcommittee must make, we urge the Subcommittee not to reduce its committee to ensuring clean air for all Americans.

In FY 1996, the House VA-HUD Appropriations Subcommittee made a number of controversial legislative changes to our nation's clear air laws. A number of these provisions persist today as roadblocks to enacting the VA-HUD budget for FY 1996. The American Lung Association is concerned about the impact of these proposed changes to the Clean Air Act. Hasty policy decisions made without the benefit of full public hearings and the expertise of the authorizing committees may have unforseen consequences that will damage the environment and the nation's health for years to come. The American Lung Association strongly urges that any changes to the Clean Air Act be consider through the appropriate authorizing committee.

## The Environmental Protection Clean Air Program

Upon signing the Clean Air Amendments of 1990, President George Bush declared,"Every American expects and deserves to breathe clean air." This is a point few Americans will deny. The Clean Air Act does provide some basis for maintaining good air quality, and controlling sources of pollution which may threaten indoor and outdoor air environments. But standing alone, the Act will not yield cleaner air.

The Clean Air Act Amendments requires EPA to issue technology based standards to control 189 toxic air pollutants by the year 2000. These standards are intended to reduce human exposure to pollutants that cause respiratory illness, cancer, birth defects, and brain damage. EPA has identified plans to issue Maximum Achievable Control Technology (MACT) standards for 87 major industrial categories that emit these toxic air pollutants. After a good start, the EPA is now gradually slipping behind its schedule for standards issuance. Even with full funding of the President's request for FY1997, EPA will have promulgated 44 regulations, with only three years left. The remaining standards may take more effort to include the growing body of information on the health effects of airborne contaminants. The American Lung Association urges the Subcommittee to increase EPA resources devoted to this effort sufficient to get the Agency back "on schedule".

Funding for federal clean air programs is desperately needed to ensure, at the least, efficient implementation and proper enforcement of these air quality regulations. We cannot overemphasize how critical this action is for the 31 million children under the age of 13 and 18 million adults age 65 and over living in non-attainment areas who are at risk of lung disease or whose respiratory conditions are exacerbated by exposure to unhealthful air.

## The Importance of the EPA Research and Development Program

Assessing the risks that air pollution poses for human health and the environment are at the core of EPA Air Program operations. Without this entity, the air program can not adequately assess the risks of air pollutant exposure to human health and the environment, nor can it accurately assess the level to which pollutants should be regulated to protect human health.

Examples include the millions of citizens (particularly children and older adults) who, if exposed to ozone levels, suffer from adverse health effects. Studies show that repeated low level ozone exposure causes structural damage in the tiny respiratory airways. These physical changes are often associated with the development of obstructive lung disease. Yet, before regulations can be implemented to protect us from ozone, proposed laws may require additional risk assessments and cost/benefit analyses of ozone's effects. We urge the Subcommittee not to divert funds from current activities to support any additional research required for risk assessments and cost benefit analysis. Any additional cost associated with risk assessment and cost benefit analysis should be supported with additional funding.

In the case of particulates, which are responsible for the haze associated with air pollution, recent studies conducted in multiple urban areas provide increasingly stronger evidence that exposures that do not exceed the National Ambient Air Quality Standards, are associated with increased death rates among people over 65 years who have underlying cardiovascular and respiratory disease. Such exposures have also been associated with increased respiratory disfunction such as asthma and bronchitis in children. Again, we urge the Subcommittee to account for the additional research and development dollars needed to comply with new regulatory requirements before any emerging public health concerns can be addressed.

The Administration's budget request provides an increase in the overall research and development budget for the EPA Air Division. Though less than needed, it still will enable the Agency to maintain its current initiatives. However, the Agency may fall short if required to conduct additional risk assessments and cost/benefit analyses. The American Lung Association encourages the Subcommittee to support the Administration's recommendations for increases in the EPA Air Program.

The American Lung Association would also like to bring to the Subcommittee's attention the health-related problems associated with indoor air pollution, including asthma related problems and allergic reactions to an array indoor air pollutants. The EPA should be encouraged to continue to investigate the causes of these problems and devise effective environmental strategies to control them. We hope the Subcommittee will examine closely the Administration's funding request for the human health effects research program, covering toxicology research relative to the nervous, respiratory, reproductive, and immune systems.

Finally, we ask the Subcommittee to consider funding recommendations for the National Institute of Environmental Health Sciences (NIEHS) Superfund Basic Research Projects. This program focuses on the health effects of toxic chemical exposure at Superfund hazardous waste sites, and devises methods for minimizing the relative health risks of exposure for clean-up site employees. The American Lung Association believes the EPA has made an excellent investment in the future of human health protection and worker safety by supporting "real" and useful research programs of this type.

Adequate funding for all health effects research programs -- including the Health Effects Research and Development, and NIEHS Superfund Basic Research Grant Programs -- offer tremendous potential for improving environmental health. The American Lung Association hopes the Subcommittee will give serious consideration to these issues as it reviews funding for these vital programs.

## EPA Environmental Justice Initiative

As we continue to review air quality in this country, the American Lung Association is increasingly alarmed by the numerous unresolved environmental inequities. Too many American families are not afforded the benefits of environmental protection law, simply because the laws are not enforced or are ignored in their communities. We continue to see disproportionate numbers of people in areas of high levels of indoor and outdoor air pollution. Many of these individuals live or work in the nation's urban centers, sites of rapidly increasing incidence of asthma among inner city children and increasing death rates from asthma and respiratory complications in African-Americans.

In terms of exposures to airborne environmental hazards (see Table 1) or incidence of environmental diseases (see Table 2) minorities are bearing a disproportionate burden. As Table 1 shows, 24% of America's children under the age of 13 live in counties where ozone exposures have exceeded the federal standard. Concerning as this fact is, the exposure for Asian/Pacific Islander and Hispanic children is even more disturbing, reaching 39.9% and 44.2% respectively. Clearly resources must be invested to protect our nation's children from exposure to air quality hazards.

### TABLE 1
### PEDIATRIC POPULATIONS EXPOSED TO OZONE LEVELS ≥ .125 PPM BY RACE AND AGE

| | AGE | | | | | |
|---|---|---|---|---|---|---|
| | 0 - 4 | | 5 -13 | | ≤ 13 | |
| RACE | Number | % | Number | % | Number | % |
| Black | 658,805 | 23.6% | 1,089,974 | 22.8% | 1,748,779 | 23.1% |
| A. Indian, N. Alaskan | 24,388 | 12.1% | 43,000 | 12.2% | 67,388 | 12.2% |
| Asian/Pacific Islander | 23,685 | 60.2% | 413,419 | 39.8% | 650,276 | 39.9% |
| Hispanic | 107,040 | 64.8% | 1,667,656 | 43.7% | 2,738,062 | 44.2% |
| Other Races | 558,082 | 49.5% | 857,686 | 48.8% | 1,415,768 | 49.1% |
| White | 3,077,213 | 22.5% | 5,155,003 | 21.4% | 8,232,215 | 21.8% |
| Total | 4,555,344 | 24.8% | 7,559,082 | 23.6% | 12,114,426 | 24.1% |

SOURCE: American Lung Association, Danger Zones: Ozone Air Pollution and Our Children, March 1995, p. 10.

## TABLE 2
## AGE ADJUSTED PREVALENCE OF ASTHMA BY RACE, U.S. 1986-1990

| Sex | Blacks | A. Indians-N. Alaskan | Asians | Whites | Hispanics | Non-White Hispanics* |
|---|---|---|---|---|---|---|
| Male | 4.43 | 4.45 | 3.96 | 4.26 | 3.48 | 4.33 |
| Female | 5.07 | 6.02 | 1.78 | 4.3 | 4.57 | 4.39 |

SOURCE: American Lung Association, Minority Lung Disease Data, 1995, p. 6.

We applaud the EPA's efforts to ensure the benefits of environmental protection are equally shared by everyone and encourage the Subcommittee to provide $4.08 million for the Environmental Justice Program. To integrate environmental equity initiatives into all aspects of the Agency's programming continues to be one of the most laudable public health steps the EPA has taken. The Agency has an enormous opportunity to "right" numerous environmental "wrongs" in this area. We urge the Subcommittee's full support of this initiative.

### The Veterans Medical Care and Research Program

The American Lung Association has long recognized and supported the value of the Veterans Health Research program not only for the health care of our veterans but as a major resource for the research and education of medical and post-doctoral students. We are deeply concerned about the impact of the proposed FY 1997 budget appropriation for Veterans Administration Medical Care and Health Research program.

Our interest in this appropriation dates back almost 50 years, when the Veterans Administration conducted its initial multi-center trials designed to determine the best way to use the newly discovered anti-tuberculosis drugs, streptomycin and isoniazid. Those studies provided information in a relatively few years which proved to be instrumental in mastering the scourge of tuberculosis that then afflicted this country. We also are grateful for the VA's important research in lung cancer, tuberculosis, emphysema and AIDS, and in other diseases which afflict many veterans.

The Medical and Prosthetic Research programs support 3 programmatic activities at the VA:

**Medical Research**: supports clinical and basic research studies to advance knowledge to improve preventions, treatments and cures for disease of particular relevance to veterans.

**Rehabilitation Research and Development**: focuses on improving the functional independence and quality of life for veterans with disabilities in need of prosthetic devices, sensory aids and mobility assistance.

**Health Services Research and Development**: conducts research at VA facilities to improve the effectiveness, accessibility and economy of health services provided to veterans.

The American Lung Association and the American Thoracic strongly urges the Subcommittee to provide $270 for these activities for FY 1997.

Although the VA Medical Research budget has had a modest rate of growth since 1985 the Medical Research budget in 1985 constant dollars has decreased by -29%. Only by adopting creative funding strategies, and by using a substantial contribution for Department of Defense appropriations each year since FY 1987 has veterans health management been able to maintain a relatively stable level of programming. The American Lung Association remains very concerned about the VA medical research budget, particularly if funding requires freezing program dollars, or blockage of any new research initiatives.

For FY 1997, the American Lung Association supports the following recommendations for VA Medical Care and Health Research programs. We believe adequate funding for health services should be provided our nation's veterans:

**Funding for the VA Medical Care Program in FY 1997.** The American Lung Association supports an appropriation of $17.5 billion for this program. Funding recommendations will permit the VA to provide top quality inpatient and outpatient services for veterans. It will also help correct past funding deficiencies that have prevented the VA from replacing outdated equipment, and addressing critical care issues such as AIDS.

**Funding for the VA Health Research Program in FY 1997.** The American Lung Association supports an appropriation of $ 270 million for VA Health Research Programs. This recommended funding approach takes into account the realities of current budget constraints, but reflects the essential funding needed to support new and current VA Health Research initiatives.

Mr. Chairman, we would caution the Subcommittee that it is most unwise to shortchange the commitment to veterans health research now, or in the future. This nation is on the verge of making great strides in understanding, treating and preventing a vast range of medical disorders. The VA Medical Research program must be strong enough to continue to focus on the special needs of veterans. Those men and women who have served our country deserve no less than a demonstrated level of commitment to their health and well-being.

The American Lung Association and the its medical section, the American Thoracic Society, appreciate the opportunity to comment on the VA-HUD and Independent Agencies FY 1997 budget. The American Lung Association, and its medical section, the American Thoracic Society, appreciate the opporuntity to comment on the FY 1997 VA-HUD and Independent Agencies Appropriation bill.

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## PREPARED STATEMENT OF MELVIN SABSHIN, M.D., MEDICAL DIRECTOR, AMERICAN PSYCHIATRIC ASSOCIATION

Mr. Chairman and members of the subcommittee, I am Melvin Sabshin, M.D. I am a psychiatrist and serve as Medical Director of the American Psychiatric Association (APA), a medical specialty society representing more than 41,000 psychiatrists nationwide. We appreciate having the opportunity to present our recommendations regarding the Fiscal Year 1997 Appropriations for the Department of Veterans Affairs (DVA) pertaining to medical care and medical and prosthetic research.

Mr. Chairman, members of the subcommittee, I am sensitive to our nation's budgetary constraints and hope that my testimony will help you to make an informed decision with respect to DVA medical care and research priorities. As a member of the "Friends of VA Medical Care and Health Research," coalition (FOVA), the APA supports FOVA's FY 1997 DVA budget proposal of $17.5 billion for medical care and $270 million for health research. While we recognize that meeting the health needs of veterans through quality health care and research continues to be an enormous challenge --- given the constraints facing all domestic programs --- we recommend that at the very least the subcommittee retain the proposed increase of $448 million to $17.0 billion for VA medical care and maintaining the current level of funding at $257 million for VA medical and prosthetic research included in the President's Budget for FY 1997. We appreciate your commitment and that of the subcommittee to provide high quality health care to the nation's veterans and we urge you to direct your attention and focus on the need for increased access to health care for veterans who suffer from mental illness and substance abuse disorders as well as vital research in these areas.

As the VA is currently in the midst of a major reorganization into 22 relatively autonomous service networks, we are especially concerned about the fate of the specialized programs. In the absence of significant central guidance, there is a great risk that inequalities in access and quality of care will be amplified and that resources may be diverted from mental health programming. The establishment of safeguards for the specialized programs is essential. We urge you to assure that the large cohort of VA patients receiving psychiatric treatment -- encompassing 25% of all VA patients -- receives adequate and appropriate care. The VA must be able to provide comprehensive psychiatric services to those veterans who suffer from chronic illnesses including schizophrenia, Post-Traumatic Stress Disorder (PTSD), Alzheimer's disease, other dementias, alcohol and substance abuse disorders, and depression.

Illustrative of programs and initiatives that we believe should be a high priority include:

### MENTAL ILLNESS RESEARCH EDUCATION AND CLINICAL CENTERS (MIRECCs)

Funding for psychiatric research in the DVA has remained vastly disproportionate to the utilization of psychiatric services. Veterans with mental illness account for approximately 25% of all veterans receiving treatment in VA medical centers (VAMCs). Despite this fact, DVA resources devoted to research, education, and even patient care for mental disorders have lagged far behind those allocated for other disorders --- less than 3% of funds for research career development grants have gone to psychiatrists and only 12% of all research has been directed toward the study of Alzheimer's disease, drug addiction, PTSD and chronic mental illness.

Research is vital to our understanding of the causes and treatment of mental illnesses, and funds must be committed to support those increased research efforts. The APA believes that the MIRECCs patterned after the very successful geriatric research, education, and clinical centers, would fit well with the concept supported by the Mission Commission. The MIRECCs would extend the benefits of research and affiliations to neuropsychiatric hospitals and to the advances in diagnostic and therapeutic skills and enhance recruitment and retention of qualified staff. For these reasons, the APA continues to support both basic and applied research in this area and the concept of special centers of excellence. The APA commends the DVA Under Secretary for Health, Kenneth Kizer, M.D. for approving MIRECCs in principle and recommends that the MIRECCS be funded as well as authorized.

## RESEARCH

There has been a tremendous, rapid progress in neuroscience in the last 20 years. Biomedical research has enhanced our diagnostic and therapeutic skills; and cost-saving as well as life-saving advances have improved the length and quality of life for many. Health services research improves the value, quality, and efficiency of health care services and this is particularly important in a climate where the entire country is wrestling with how health care delivery should be organized and funded. The APA recommends restoring the DVA research programs to $270 million for next year in order to adequately fund critically needed DVA medical care and health research The APA further supports the notion of strategic emphasis areas to bring the research investment into better alignment with the demography of the veteran population. The APA notes that the leading discharge diagnoses in DVA are in the mental illness categories.

## PROGRAMS FOR THE SERIOUSLY MENTALLY ILL VETERANS

VA continues to provide innovative models for the treatment and rehabilitation of the seriously mentally ill veteran under the ongoing reorganization of the Veterans Health Agency (VHA) as the programs serving this population have been deemed "special." Although methods of ensuring sufficient funding for veterans with serious mental illness have not yet been worked out within the upcoming new single capitation budget reallocation system, Dr. Kizer has stressed the importance of special VHA services and will hold Veterans Integrated Service Networks (VISN) Directors responsible for providing quality care for seriously mentally ill veterans. The Under Secretary's Special Committee for the Seriously Mentally Ill Veteran met for the fourth time last summer and is scheduled to meet in April of 1996. The Special Committee plans to undertake a range of tasks that will include: developing a national VHA policy with regard to seriously mentally ill patients; integrating VA and non-VA research findings on current practice; developing clinical guidelines for treatment of schizophrenia with outside experts (including APA and the National Institute of Mental Health); discovering ways to calculate risk adjustment for this relatively expensive, but high priority, VA patient population; and involving consumers and consumer groups in planning for treatment of seriously mentally ill veterans.

The intensive psychiatric community care (IPCC) programs designed to assist chronically hospitalized, severely mentally ill veterans to live in the community are off to a good start after receiving funding last year. Cost and clinical effectiveness of the IPCC programs are being monitored nationally and data on this state-of-the-art program will soon be available.

The Unified Psychogeriatric Biopsychosocial Evaluation and Treatment (UPBEAT) program, that provides interventions to older patients who are hospitalized on medical and surgical units and who also have symptoms of anxiety, depression, and/or alcohol abuse is currently underway in nine VAMCs. A non-VA National Advisory Board that recently reviewed the program commended DVA for developing and supporting such an innovative mental health program. The Advisory Board further recommended that DVA disseminate UPBEAT experiences and findings to other VA settings as well as private, risk-based contracting systems as such dissemination would benefit DVA at a time of increasing consciousness about efficient use of resources.

The Congressionally funded, Long Term Mental Health Enhancement (LTMHE) project directed towards enhancing patient care at 28 of VHA's predominately psychiatric VA medical centers, is continuing to show that psychiatric patients who may have spent years, if not decades, in mental hospitals can be motivated, rehabilitated, and supported to live in community settings with proper intervention. Results from the first three years support funding for IPCCs, Day Hospital, and intensive inpatient psychosocial rehabilitation approaches.

The APA believes that the Under Secretary's Special Committee for Seriously Mentally Ill Veterans provides important leadership in addressing the needs of seriously mentally ill veterans. We urge the subcommittee to continue to support the IPCC, UPBEAT, and LTMHE programs which serve this population.

## SUBSTANCE ABUSE

The current thrust in substance abuse programming in many VA medical facilities has been in the direction of eliminating inpatient substance abuse treatment. Some of this program restructuring has been well thought out with the development of alternative residential resources, expanded ambulatory care, and provision of acute inpatient care where necessary. Unfortunately, there has been some movement in the direction of emulating the care provided by profit driven and abusive managed care companies and Health Maintenance Organizations in the private sector. Restraints on access and duration of treatment occur that are medically inappropriate and lacking in any supportive scientific evidence. The unfortunate truth is that historically, coverage for the treatment of substance abuse and mental illness by "bottom" line cost-driven managed care plans has been poor to nonexistent. The APA is concerned that if the latter approach becomes the norm in DVA, it will have a severe adverse impact on the large number of veterans treated in the system who have severe medical and psychiatric medical co-occurring illnesses with accompanying regrettable social consequences such as homelessness and unemployment. APA believes that maintenance of treatment services to this patient population is critical during these times of change, not only because of the prevalence of the diagnosis among VA patients (25%) and the cost of untreated substance abuse to the Department, but also because the erosion of substance abuse services in the voluntary sector makes VA's treatment continuum even more crucial as a resource for our veterans.

## HOMELESS

Studies show that about one-third of adult homeless individuals have served their country in the armed forces. This means that on any given night as many as 250,000 veterans are sleeping on the streets or in shelters. Nearly 40% of homeless veterans suffer from severe, persistent and disabling mental illnesses, and half of these also have substance abuse disorders. An as yet unaddressed homeless veteran patient population became apparent with DVA's first end of year survey of homeless veterans in DVA's acute care beds and domiciliary beds. Results of the study, conducted on September 30, 1995, revealed that 23% of veterans in these VA inpatient settings are homeless at the time of admission. Another 7.4% of hospitalized veterans while not homeless at the time of admission, lost their housing since they were admitted and were therefore at high risk of homelessness after discharge. Hospital lengths of stay at the time of the census were generally greater among homeless than domiciled veterans in the same acute care program (e.g. 51 days versus 45 days in general psychiatric beds and 21 days versus 16 days in substance abuse beds).

As DVA increasingly shifts its focus of care from inpatient to outpatient services, it is apparent that homeless veterans will be the group least likely able to access these treatment programs. DVA needs to take advantage of and expand existing programs to provide residential alternatives to hospitalization. This can be readily accomplished through DVA's Homeless Providers Grant and Per Diem Program. This program, currently funded at $6.0 million allows DVA to provide grants to state and local governments and non-profit organizations to purchase, build, or renovate transitional residential care programs and service centers for homeless veterans. The per diem component of the program allows VA to provide financial assistance to grant recipients and other homeless veterans services providers to offset operating expenses. When programs that were awarded grants in FY 1994 and FY 1995 become fully operational, they will make over 1500 community based beds available for homeless veterans. By assuring that adequate funds are available for per diem payments for these programs, VA can establish a network of safe residential programs to serve as alternatives to hospitalization for homeless veterans. APA recommends increased funding to support DVA's Homeless Providers Grant and Per Diem Program. At the end of FY 1997, several of VA's specialized homeless veterans treatment programs are scheduled to expire, the APA strongly urges reauthorization and continued funding of these programs in FY 1997 and future years.

## POST-TRAUMATIC STRESS DISORDER (PTSD)

The provision of care for veterans with PTSD related to military service continues to be one of DVA's top priorities. PTSD is treated through both general psychiatric and specialized mental health clinical programs as well as through the 205 Veterans Outreach Centers. In FY 1995, there were 14,849 episodes of inpatient treatment for PTSD, with 4,902 admissions to specialized inpatient and residential programs, and 33,015 veterans were treated in outpatient PTSD clinical teams in VAMCs and clinics. The ongoing PTSD program evaluation suggests that shifting to shorter term inpatient days and increasing emphasis on outpatient care while considering the clinical needs of the patient populations served will result in care that is provided more cost efficiently. While the President's budget included level funding for PTSD programs, the fact that PTSD is one of the special programs identified in Dr. Kizer's "Vision for Change" ensures that the needs of veterans with PTSD will continue to be met and that high quality services will be delivered. We appreciate this subcommittee's ongoing commitment to research and treatment for veterans that suffer from PTSD.

## PSYCHOLOGIST PRESCRIBING DEMONSTRATION

The APA continues to be concerned about recurring allegations that the DVA is either allowing non-physician mental health providers to prescribe potentially dangerous medications -- we have been assured by DVA that this is not occurring -- or that alternative efforts may be made to persuade you to initiate a demonstration program designed to train clinical psychologists to prescribe specified psychotropic medications based upon a shortage of medical professionals. We believe that this would be a medically inappropriate substitution of care by psychologists, and puts patients at unnecessary risk. Today's new armamentarium of psychoactive medications are highly complex and potentially toxic. Knowing whether and when to prescribe such medications, which medications to use, appropriate dosage levels, and understanding the interactions between these and other medications and indeed a physician's understanding of the patient's entire medical condition, are critical to providing safe and appropriate care.

We are pleased to report to this subcommittee that concern about the creation of a DVA demonstration program stemming from the establishment of the Department of Defense (DoD) "pilot demonstration program" has abated since enactment of the FY 1996 DoD authorization bill. The DoD legislation directs the DoD Secretary to terminate the military psychologist prescribing training demonstration program, prohibits the enrollment of any new participants in the program, and requires the General Accounting Office to conduct a study of the program.

We applaud the Congress for its decision to put patient safety ahead of politics and urge you to reject efforts to initiate a similar program in the DVA.. Psychiatry and psychology work well together but are not the same. Understanding this, no state permits or licenses psychologists to prescribe any medication. We strongly oppose any plan to permit inappropriately trained psychologists to "practice medicine" at the risk of unknowing veterans.

Mr. Chairman and members of the subcommittee, on behalf of the American Psychiatric Association, I appreciate this opportunity to express APA's views on the FY 1997 VA medical care and medical and prosthetic research budget. We need your leadership to provide high quality health care and medical research breakthroughs to veterans particularly for those who suffer from mental illness and substance abuse disorders. We are ready to work with you to provide the best health care available to the nation's veterans.

## PREPARED STATEMENT OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

This testimony is submitted on behalf of the members of the American Psychological Association (APA), a scientific and professional organization of 148,000 psychologists and affiliates. APA appreciates the opportunity to present testimony on one agency and one Department under the jurisdiction of this subcommittee -- the National Science Foundation (NSF) and the Veterans Health Administration in the Department of Veterans Affairs (VA).

The federal investment in research is essential to the continued good health of the U.S. economy. Research supported through the nation's universities has been instrumental in sustaining growth in both domestic and international markets. This growth has allowed the U.S. to maintain a standard of living for its citizens that is the envy of the world. This has been accomplished not only by the provision of material goods, but by steady -- and sometimes dramatic -- improvements in health care and education.

Whole industries, now an integral part of the U.S. and global economy, existed only in embryonic form (if at all) a few years ago, and owe their existence to research supported by the federal government. Modern telecommunications, cybernetics and biotechnology are but a few examples. It was Department of Defense and NSF-supported research that led to the creation of the Internet and the explosion of computer networks. We are only now beginning to explore the possibilities of this new technology on individual lives, education and commerce. The remainder of this testimony will focus on how the National Science Foundation (NSF) and the Veterans Health Administration (VHA) help meet this most fundamental responsibility of government.

## NATIONAL SCIENCE FOUNDATION

The NSF enjoys strong support of members of Congress and Administrations, past and present. However, this has not proved sufficient to shield it from funding cuts. Along with many other agencies and departments whose budgets lie in the discretionary portion of the federal budget, NSF's estimated FY 1996 budget declined from the 1995 level. As of the date when this testimony was written, NSF still did not have a full FY 1996 budget but was operating under a continuing resolution. This disruption, coupled with the two government shutdowns, has put a severe strain on the agency by disrupting the grants review cycle, the disbursement of research money, and the ability of NSF staff to make firm FY 1996 plans.

APA urges the Subcommittee to do everything it can to complete FY 1996 funding for NSF and ensure that: 1) NSF's FY 1997 budget is approved before the start of the 1997 fiscal year, and 2) a small increase for FY 1997 is approved to ensure a budget not eroded by inflation. *APA supports the FY 1997 Administration request of $3.3 billion for NSF.*

This money will support only the best research in the nation's universities -- research that has undergone rigorous merit review. This includes research and programs to improve the quality of science and math education, from K-12 through undergraduate and graduate studies.

### Directorate for Social, Behavioral and Economic Sciences (SBE)

NSF supports basic research in all the scientific disciplines. It has long been recognized that the strength of U.S. science depends upon advances in all fields of science, including the social, behavioral, and economic sciences. NSF's support of behavioral science began more than 43 years ago and has led to many important discoveries. One example is the work of William Greenough at the University of Illinois. Dr. Greenough has demonstrated that life experience is reflected in the number of synapse, or vital connecting circuits, the human brain forms to store and use information. This means that the very structure of minds and brains is influenced by early experience and not fixed at birth. Learning opportunities given or denied children determine how, and how well, their minds will grow -- affecting long-term mental and intellectual capacities. This finding has important implications for how we educate our children and for life-long learning opportunities.

Another example can be seen in the research of John Swets, who did pioneering work in signal detection theory. Dr. Swets' research provided a powerful tool for extracting critical information from the confusion of background noise in which it is usually embedded. This has been fruitfully applied to a variety of real-world problems, including medicine where Dr. Swets work has helped general practitioners improve their ability to detect breast cancer. Also, by teaching non-specialists signal detection principles, Dr. Swets has helped them become as accurate as oncologists in spotting the mammogram features most indicative of breast cancer.

*APA urges the Subcommittee to approve the FY 1997 request of $93 million for Social, Behavioral and Economic Research (SBER) -- a 9.4 percent increase over SBER's FY 1996 estimated budget.* SBER's support of research in psychology, sociology, anthropology, archaeology, linguistics, economics, geography and political science has encouraged and facilitated unique and valuable interdisciplinary research proposals -- within SBER and with the other NSF research Directorates. In addition to the established research programs, SBER has also served as a catalyst and key support for some exciting, new research initiatives. The $8 million increase requested for FY 1997 will provide increased support for the following multi-disciplinary initiatives.

Learning and Intelligent Systems

This important initiative, which is a joint endeavor of SBE and other directorates including Education and Human Resources (EHR) and Computer and Information Science and Engineering (CISE), will fund research that has crossed disciplinary boundaries and needs the support of NSF to advance the science.

Recent research has produced dramatic advances in our scientific understanding of how people organize and use knowledge. This understanding is important both for improving education and for devising "smart systems" that function like people do. Psychology, neuroscience, computer science, linguistics, artificial intelligence and education research have all contributed to the growth of this field. However, many of the most complex and potentially important research questions can no longer be investigated solely within the separate disciplines. These questions now demand collaboration across disciplines -- one of the many reasons Learning and Intelligent Systems has been identified as an NSF-wide initiative.

SBER-supported research on Learning and Intelligent Systems will help increase the scientific understanding of intelligent and cooperating systems that learn over time. This is essential to advance areas that depend on processing large amounts of information in order to take intelligent action (such as automated air traffic control systems); to support the design and execution of advanced technology; and to support advances and improvements in education.

Human Capital Initiative (HCI)

HCI is a multi-disciplinary research initiative, spearheaded by SBE that is also supported by EHR. It was developed in coordination with other federal agencies with the goal of filling gaps in our fundamental knowledge of individual and group behavior. Results from this research will improve understanding of the processes by which individual experiences in families, schools, and the workplace join with biological and psychological factors to maximize individual and group productivity.

**Education and Human Resources Directorate (EHR)**

EHR plays an integral role in NSF as the Directorate that is responsible for promoting and improving science and math education at all levels, and serving as the link between the scientific and education communities. This latter role is very important because the transfer of research results relevant to learning and education, from the laboratory to the classroom, is often slow or nonexistent. EHR provides that important connection for science and math education.

Psychological science has much to offer in ongoing efforts to raise scientific literacy and to ensure that all students have the opportunity to learn the information and skills they will need to be productive citizens in the next century.

*APA asks the Subcommittee to support the FY 1997 Administration request for EHR of $619 million.* This is a 3.3 percent increase over EHR's estimated FY 1996 funding level -- but only a 1.3 percent increase over EHR's FY 1995 level.

Research, Evaluation and Communication (REC)

REC, a Division of EHR, supports research that is directly relevant to EHR's mission. It also funds evaluation studies which are important components of any program that introduces new goals or methods of teaching science and math. REC is responsible for the evaluation of the rural systematic initiatives and will begin the evaluation of the urban systematic initiatives in FY 1997. These initiatives are the centerpiece of EHR's efforts to improve U.S. science and math education.

Research in cognitive psychology supported by REC often has direct implications for the implementation of EHR programs. This is one of the few sources of support for psychological research focused on educational goals. *APA supports the FY 1997 request of $51 million for the Division and urges the Subcommittee to recommend this modest 4.1 percent increase over the estimated FY 1996 level.*

## VETERANS HEALTH ADMINISTRATION (VHA)

The Veterans Health Administration (VHA) in the Department of Veterans Affairs (VA) funds research that supports the clinical mission of the VA to care for our nation's veterans. The VA sponsors research across the full spectrum of health research including medical, rehabilitation, and health services research. Behavioral research is a vital component of that research portfolio.

*APA joins the Friends of VA Medical Care and Health Research (FOVA) in recommending a FY 1997 budget of $270 million for VHA health research.* The FY 1997 budget will support research that contributes not only to improved care for veterans, but extends beyond the veteran population to our society as a whole. This modest $13 million increase over FY 1996 would allow VA research to maintain current services and support a few new initiatives. This recommendation is consistent with the increase provided for the National Institutes of Health under the continuing resolution passed in early January 1996.

VHA also contains the Medical Care account where funds for the Education and Training Programs of health care professionals are found. In FY 1995, 1,248 psychologists were trained in the Associate Health program. VA psychologists have provided effective patient care for five decades. They have played a significant role in developing and refining: diagnosis and treatment of PTSD and substance abuse; prevention and wellness programs; stress management techniques; vocational assessment and rehabilitation; cardiac rehabilitation; and smoking cessation and weight management programs. These health professionals provide direct services in VA hospitals, outpatient clinics, Outreach Centers, spinal cord injury and rehabilitation clinics, and PTSD and readjustment counseling programs.

The VHA psychology internship program is cost effective. A very high percentage of those trained -- historically 90 percent -- stay in the VHA system, and the need for psychologists in the VHA system continues to grow. *APA urges the Subcommittee to fully support the VHA Education and Training Program and VA psychologist internship program.*

* * *

In conclusion, we would like to express our appreciation for this opportunity to submit testimony to the Subcommittee on behalf of the American Psychological Association, on the FY 1997 funding for the National Science Foundation and the Department of Veterans Affairs. Psychological science addresses a broad range of important issues and problems confronting our nation. As the Subcommittee considers funding requests, we urge you to place a high priority on those issues outlined in this testimony. We would be happy to provide any further information the Subcommittee members may need.

# PREPARED STATEMENT OF THE NATIONAL SCIENCE FOUNDATION TASK FORCE OF THE COUNCIL ON EDUCATION OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

**Mr. Chairman and Members of the Subcommittee:**

The National Science Foundation (NSF) Task Force of the Council on Education of the American Society of Mechanical Engineers (ASME) is pleased to have this opportunity to provide written testimony on the NSF Fiscal Year (FY) 1997 budget request. The 125,000-member ASME is a worldwide engineering society focused on technical, educational, and research issues. It conducts one of the world's largest technical publishing operations, holds some 30 technical and 200 professional development course conferences each year, and sets many industrial and manufacturing standards. Effectively utilizing its members in academia and industry, ASME is a recognized leader in engineering education reform. This statement represents the considered judgement of the NSF Task Force and is not necessarily a position of ASME as a whole.

## ENGINEERING AT NSF

The goals and principles that drive the FY 97 NSF budget request (a balanced portfolio, bridging barriers, and partnerships) are particularly meaningful because NSF is the only federal agency that covers both research and education in all fields of science and engineering. Engineering research and development resides at a boundary between scientific discovery and innovation and the use of technology in processes or products. In other words, engineering research "enables the nation's capacity to perform."

The investment strategy in Engineering (ENG) at NSF, i.e., maintaining the balance of mature and emerging engineering fields, and supporting both disciplinary and cross-disciplinary research by individual investigators, small groups, or engineering centers of excellence, is sound. Partnerships among government, industry, and academia are a key mechanism in the strategy and the NSF emphasis placed on partnering is similarly well founded.

Engineering at NSF is a critically important part of our nation's ability to integrate fundamental knowledge into useful products and processes. NSF is the source of 33 percent of the federal support of fundamental engineering research -- more than any other agency. The FY 97 budget request for ENG, which represents a 12 percent increase over the FY 96 estimate, to 10.7 percent of the NSF budget, is fully justified. However, to put this increase in perspective, one must recall the FY 96 budget estimate which shows an 8.1 percent decrease from the requested FY 97 level and is 2 percent below the FY 95 actual funding level.

Given the unclear nature of the FY 96 budget, the Task Force commends the NSF investment strategy in ENG. Furthermore, the Engineering Directorate has done a commendable job in allocating the resources in such a way as to stress research focused on areas of national concern and generic, discipline-oriented research.

## ENGINEERING RESEARCH

Engineering research at NSF is strongly endorsed by the Task Force. Support goes to a balance of investigations, from individuals concentrating on creative solutions to complex manufacturing problems, for example, to a team of interdisciplinary researchers implementing control strategies in food processing that enhance product quality or safety. When such a wide range of possibilities exist for the conduct of engineering research, the value of partnerships focused on mutual needs and benefits becomes extremely important. The emphasis on partnering is excellent.

The Engineering Directorate is to be commended for investing 93 percent of the requested FY 97 increase in research projects. It should be noted, however, that 34 percent of the increase was mandated by Public Law 102-564 for the Small Business Innovative Research (SBIR) Program and a "substantial share" was due to a shift of Academic Research Infrastructure (ARI/Instrumentation) funds to the research projects portion of Directorate budgets. The Task Force would like to particularly note the increased ENG support for the cross-disciplinary, integrative research topics, learning and intelligent systems, plasma processing, and synthesis and processing of nano-particles. The Foundation's vision in the area of learning and intelligent systems is exceptional. For example, applying innovations in advanced learning and intelligence to complex manufacturing systems should put U.S. industry on the cutting edge.

In addition, major increases are made to the Grant Opportunities for Academic Liaison with Industry (GOALI) and the SBIR Program (mandated). These programs are in the mainstream of the engineering researcher's interaction with industry via cooperative projects and contribute to more effective knowledge transfer. The SBIR Program emphasizes the commercialization of results and provides increased support for university/industry partnerships. Partnerships built in this way will accelerate the adoption of advanced technologies by industry thereby enhancing U.S. global competitiveness and the creation of high quality new jobs -- a result applauded by the Task Force.

## ENGINEERING AND PRE-ENGINEERING EDUCATION

Engineering at NSF is to be highly praised for the continuing support of undergraduate education, training, and human resource development. The qualifications of the workforce for high technology industries is vital for their continued global competitiveness. It requires the strengthening of K-12 education and the cultivation of programs building bridges between high schools, community/junior colleges, and four-year and graduate universities.

In 1992, ASME addressed these issues by investing its resources to form a Board on Pre-College Education. This Board is structured to improve pre-college education for all students with a special emphasis on mathematics and science to produce citizens with an education sufficient to function effectively in a society that must become increasingly capable of managing technology intelligently. In particular, the Task Force applauds the proposed 20 percent increase in Urban Systemic Initiatives and the four-fold increase in Rural Systemic Initiatives.

The Task Force also encourages support for the $8.75 million increase in Education and Human Resources (EHR) for undergraduate education -- especially as it relates to the improvement of advanced technician training. In addition, the request to bolster the support for Advanced Technological Education (ATE) to $30.85 million, an increase of over 32 percent is justified. ATE has already demonstrated the capability to have direct and substantial impact on the enhancement of tech-prep programs which strengthen both high school and community college programs in applied science and mathematics and provide pathways for students to advance to four-year institutions to complete baccalaureate degrees. These programs have been coupled commendably with industries providing internship experiences for both students and faculty from high schools and community colleges. Furthermore, community college faculty are being prepared to teach advanced technologies by university researchers who are at the cutting edge. The ATE Program will have an increasingly important impact on providing greater numbers of highly qualified technical specialists for critical, high-tech industries such as micro-electronic manufacturers and producers of biotechnology materials.

The Task Force applauds the NSF emphasis on the dissemination of educational innovations coming from the Engineering Education Coalitions (EECs) to the academic community in general. ENG should be cautious, however, about an early decision to "institutionalize" the EEC support after each project funding period. Of concern is the possibility that premature transferring of full support of these programs to these institutions could be detrimental. It is often difficult to judge when unique thrust areas reach their productivity peak. In the case of engineering education, where a curriculum change takes more than five years to impact entry-level engineers, the judgment should not be made precipitously. ENG's increased support of workshops for new faculty training to prepare them for their roles as educators and researchers should be commended.

Similar commendation is offered for the increased support of research opportunities for undergraduates. NSF fellowship support continues to decline -- down almost 18 percent in ENG in FY 97. Repeating the Task Force caution espoused last year, the long-range needs for engineers and managers with advanced technical education are not known. Our global competitors routinely have technically-oriented managers in government and industry leadership positions. It is true that an increased number of graduate research assistants will result as fellowships decline in number. The crucial difference is that the NSF Fellowship/Traineeship Programs attract the "blue chippers," the best and brightest, into engineering. In order to retain an adequate flow of faculty members, researchers, and technically-adept managers, the leaders of tomorrow, the Task Force recommends that NSF not abandon this important program.

## ACADEMIC RESEARCH FACILITIES AND INSTRUMENTATION

The nation's research and technology infrastructure continues to require major renovation. The ARI Program ($100 million estimated in FY 96, equally divided between facilities and instrumentation) has been discontinued in the FY 97 request. The facilities portion will be zeroed out and the support for instrumentation (an amount unspecified) will be transferred to the research projects portion of the Directorate budgets. The Task Force believes that NSF support of facilities and instrumentation is important.

The ARI Program has been successful in leveraging public and private funds for facilities. Without the NSF ARI Program as a driver, the states and/or other funding sources are not likely to make the necessary investments. In addition, the NSF investment, along with other cost sharing, frequently influences the priority setting of construction and renovation projects. NSF will lose important prestige, leverage, and priority in impacting the future of a crumbling national research infrastructure.

# PREPARED STATEMENT OF THE AMERICAN WATER WORKS ASSOCIATION RESEARCH FOUNDATION

We request that the Subcommittee on VA-HUD-Independent Agencies add $5 million to the FY97 EPA R&D budget for drinking water research and that the funds be ear-marked for the AWWA Research Foundation [AWWARF]. This ear-mark will be matched by contributions from more than 900 water agencies participating in the AWWARF research subscription program. This combined funding will be used to continue the EPA/AWWARF partnership which addresses the priority research needs of the water supply community.

The Committee report which accompanies S-1316, the Safe Drinking Water Act amendments of 1995, identifies five priorities including the following: (1)"...give EPA the flexibility to set drinking water standards based on peer-reviewed science,"(2)"...the Congress must commit the funds to carry out needed research...,"(3)"...a public record must be created to educate the American people about the risks they face from a particular contaminant...,"(4)"...the act must be affordable for small systems...,"(5)"...Congress must allow States and local governments to be full partners in the development...of drinking water regulations." The cooperative research venture which is proposed will continue to address all of these stated priorities.

These priorities require a sound scientific basis for decision making. This scientific basis can only be achieved with the application of sufficient research funding and utilization of a research process which takes advantage of the vast knowledge within the water community, including Federal scientists. Unfortunately, it will be very difficult to reconcile the priorities identified by the Senate Safe Drinking Water Act with the funding constraints being created by the effort to move towards a balanced federal budget. The partnership which we propose for FY97 is the only proven means of satisfying both of these seeming conflicting objectives.

Adequate funding for science based regulations can best be provided by continuing the local/federal research partnership which has been established between AWWARF and the Congress. The VA-HUD Committee initiated this partnership by providing $3 million in "seed money" from 1983-1985. AWWARF and the water supply community responded by creating the research subscription program in 1986 which is now voluntarily supported by over 950 subscribers in 48 States, 7 Canadian Provinces, the United Kingdom, France, Australia and New Zealand. From FY84 through FY86, and again from FY92 through FY97, the Congress has provided AWWARF with $8,775,000 in ear-marked add-ons. During the same period, the water community, through AWWARF, responded by investing $85 million in drinking water research which has funded 350 projects and produced 180 published research reports.

In 1995 alone, AWWARF committed $6,602,478 in cash to 38 different research projects. When in-kind contributions are added, the total research commitment for 1995 is over $14,140,736. This means that the $2,500,000 which the Committee so generously added and ear-marked for AWWARF in FY96 received a cash match of $2.64 in AWWARF funding for every $1 of Congressional add-on. The match increases to $5.66 to $1.00 when in-kind contributions are added. AWWARF's 1995 research projects are committed to problem solving research in areas such as cryptosporidium, D/DBP's, arsenic and groundwater disinfection.

AWWARF has no in-house research capability, preferring to take advantage of the knowledge available within the international community of scientists affiliated with the world's leading universities, water utilities, and consulting engineering firms as well as federal, State, and foreign governments. In 1995 alone, the AWWARF competitive research process resulted in contracts and agreements with the EPA, USDA's Agricultural Research Service, the Department of Energy, and the Bureau of Reclamation. State agencies receiving support included the Wisconsin State Laboratory of Hygiene, the New York State Department of Health, and the Florida Department of Health. International research contractors included the Scottish Parasite Diagnostic Lab, Kiwa [the Netherlands Water Research organization], the United Kingdom's Water Research Center, and the National Research Council of Canada. All of these agencies are subject to the same stringent peer review and monitoring process which is applied to other contractors.

While AWWARF funded research is designed to address a wide range of regulatory and operational priorities, much of our recent focus has been directed towards the issues of cryptosporidium and disinfection/disinfection by-products. AWWARF has invested over $18 million in cryptosporidium research including almost $7.7 million for 21 projects in 1995/96 alone. These projects are helping water utilities and regulators to better understand cryptosporidium in watersheds, improving current detection methods, developing new methods, and increasing our knowledge of the mechanisms of infectivity. The research is being conducted by scientists in the United States, Canada, the United Kingdom, and the Netherlands. We have included a listing of our cryptosporidium projects and research contractors for 1995 in the addendum of our testimony as well as a listing of our 1996 projects for which RFP's have been issued.

Cryptosporidium is but a part of the much larger issue of Disinfection/Disinfection By-Products. In order to help ensure that the negotiated rule-making process results in a science based D/DBP regulation, AWWARF created the D/DBP Research Council which brings the parties of EPA's negotiated rule-making together to identify, fund, and manage the necessary research. The council was founded with the cooperation and support of EPA's Office of Water and Office of Research and Development. The nine members of the Council represent all of the parties to the negotiated rule-making including EPA, water suppliers, State government, and the environmental community. AWWARF has agreed to match EPA commitments to D/DBP research dollar for dollar up to $1 million per year. The first meeting of the Council to select and fund projects will be April 11 and 12 in Washington.

Another concern of water suppliers, regulators, and the general public is arsenic. AWWARF is addressing this issue by providing nearly $1.4 million in funding for four projects. This research is providing answers on the best technologies for removing arsenic from drinking water and their associated costs. It has also identified reliable methods for detecting arsenic in drinking water down to a level of .5 parts per billion.

AWWARF also sponsored a research needs workshop this past May. This gathering, cited on page 40 of the report accompanying S-1316, identified 31 projects with a total cost of $19.3 million which are designed to answer many of the questions about low level exposure to arsenic and associated cancer risks. AWWARF has already funded two of these projects but our resources fall far short of the nearly $20 million in health effects research that will be needed over the next four years to secure a science based arsenic regulation. We were pleased when the Committee added $1 million to the EPA R&D budget in FY96 for research into the health effects of arsenic. AWWARF is prepared to work with all parties to this issue in support of arsenic research.

## CONCLUSION

AWWARF's research program embraces the efforts of hundreds of water suppliers and researchers who serve on research teams, on project advisory committees, or who are associated with a participating utility. It is impossible in Congressional testimony to do justice to the full breadth of this research effort. We have, however, attempted to provide an overview on some of our most important research concerning cryptosporidium, D/DBP's, and arsenic.

Over the past decade, local water communities have joined together to create and support a national drinking water research effort directed at their common problems. This commitment has grown from $1 million a year in 1986 to over $7.6 million in 1995. Unfortunately, this investment in science based drinking water regulations has not been matched by EPA. It continues to be disturbing that during a period when EPA's drinking water regulations rose nearly five-fold, the Agency's R&D budget declined from $9.8 to approximately $5 million a year.

The realities of a balanced budget by 2002 have made any internal EPA debate over drinking water research almost moot. Yet the research needs of regulators and water suppliers far exceeds the funds being generated by AWWARF. The challenge remains of how to secure the tens of millions of research dollars that will be needed over the coming years to secure science based drinking water regulations. The AWWA Research Foundation and the water supply community respectfully submits its model of leveraging locally generated research dollars with Congressional add-ons ear-marked for AWWARF as one of the best and most immediate responses to this challenge. The Committee's support over the years is appreciated by the entire water community and consideration is requested for the FY97 budget.

## ADDENDUM

### AWWARF 1995 Cryptosporidium Projects

**Evaluation of Sources of Pathogens in Watersheds--$908,990**
**Stroud Water Research Ctr, Wisconsin State Laboratory for Hygiene**

**Optimizing Filtration in Biological Filters--$591,000**
**University of Waterloo, Georgia Institute of Tech., Johns Hopkins**

**Method for Giardia & Crypto Detection Viability--$781,000**
**Thames Water Utilities, Scottish Parasite Diagnostic Laboratory**

**Improving Immunofluorescence Assay for Giardia dna Crypto--$433,384**
**N.Y. State Department of Health**

**Colonize Biologically Active Filter Media with Pathogens--$239,000**
**Montana State University, Metropolitan Water District California**

**Integrated Multi-Objective Membrane Systems for Control of Microbials and DBP Precursors--$1,422,500**
**Kiwa [Netherlands]**

**Quantitative particle County Methods Development--$215,387**
**Marcolm Pirnie, University of Texas**

**Synergistic Effects of Multiple Disinfectants--$423,312**
**University of Alberta**

**Innovative Electrotechnologies for Crypto Inactivation--$150,00**
**University of Arizona, Malcolm Pirnie**

Detection of Cryptosporidium and Giardia by Flow Cytometry--$87,078
Wisconsin State Laboratory of Hygiene

Particle Image Velocimetry--$100,537
State University of New York at Buffalo

## 1996 AWWARF Cryptosporidium Projects

(Research contractors will be chosen through peer review and competitive awarding later this summer)

Cryptosporidium parvum Viability Assay--$250,000

Treatment Options for Giardia,Crypto, and Other Contaminants in Recycled Backwash Water--$350,000

Cryptosporidium parvum: Surrogate Human Pathogenicity Animal Model Using Swine--$300,000

Addressing Particle Counting Needs of Water Utilities--$100,000

Cryptosporidium and Giardia Antibody Protocol--$250,000

Application Surrogate Measures Improve Plant Performance--$200,000

New Approaches to Isolate Cryptosporidium and Giardia--$250,000

Assessment of Molecular Epidemiology of Waterborne Cryptosporidium With Respect to Origin--$250,000

Synthesis Report on Cryptosporidium--$40,000

Comprehensive Evaluation Crypto Inactivation in Natural Waters--$75,000

Workshop to Examine the Role of Drinking Water in Cryptosporidiosis in the Immunocompromised Population--$50,000

## AWWARF Projects 1993-1995 on Arsenic

Arsenic Removal by Enhanced Coagulation/Membrane Process--$280,874
UCLA, Metropolitan Water District of Southern California

Arsenic Treatability Options and Residuals Evaluation--466,023
University of Colorado, University of Washington

Analytical Chemistry of Arsenic in Drinking Water--$299,000
Montgomery Watson Engineering, Metropolitan Water District of CA

Development of an Improved Method for the Determination of Arsenic at Low Levels in Biological Matrices--$217,350
University of Alberta, University of British Columbia at Vancouver

Feasibility of New Epidemiologic Studies on Arsenic Exposure at Low Levels--$102,823
University of California at Berkeley

Workshop on Arsenic Health Effects and Treatment--$68,000
AWWARF

# PREPARED STATEMENT OF DR. WILLIAM V. BOYNTON, PROFESSOR OF PLANETARY SCIENCES, UNIVERSITY OF ARIZONA

Thank you for the opportunity to submit testimony to the Senate VA-HUD Independent Agencies Appropriations Subcommittee. The Space Science Working Group of the Association of American Universities represents several hundred space scientists at approximately fifty universities nationwide.

Despite cuts in its budget, NASA continues to provide a program that excites the public, especially school children. For example, in the last year, the Compton Gamma Ray Observatory discovered a new type of object in the Milky Way; Galileo's Probe has suggested a complete rethinking of Jupiter's atmosphere; Ulysses explored the sun's polar regions, and TOPEX/Poseidon revealed important new aspects of the energy transfer between oceans and the atmosphere.

Scientists in the SSWG carry out their research within all three NASA science offices (Office of Space Science, OSS; Office of Mission to Planet Earth, MTPE; and Office of Life and Microgravity Sciences and Applications, OLMSA). The recently released FY97 NASA budget has many positive features; we:

- commend the agency for retaining outstanding scientific content in re-scoped smaller missions which are up to one-fourth the cost of the original designs;
- commend NASA for finding efficiencies which allowed several FY96 new starts even in a declining budget, including SOFIA and TIMED;
- urge the continued orderly development of the recent new starts; and
- emphasize the importance to university research and education of the NASA science programs, particularly the Data Analysis, Research & Analysis lines, and the suborbital program.

## OFFICE OF SPACE SCIENCE

The Office of Space Science offers an exciting, broad program of investigations in astrophysics, planetary exploration, and space physics. However, as we pointed out last year, it is very different from other parts of the government in the way it must do business. First, in order to continue with this exciting program, it is essential to approve the missions that are scheduled as "new" starts. Second, new starts for NASA are not like those for other government programs, since NASA's missions begin and end. While one mission is being planned for a possible new start, another is traversing vast interplanetary distances, another is in orbit around a planet, and a still earlier mission has ended and its data are being analyzed. Without continuing new starts, there will be no space science exploration after the current missions meet their goals. Neither NASA nor the SSWG is requesting new starts for OSS in FY97, but we urge the Committee to keep this need in mind in the out-years.

### NASA's Emphasis on Smaller Missions

NASA is trying a new approach of flying a continuing series of imaginative, low cost missions that address focused, but important, scientific goals. These missions are easier to plan and are quicker to develop because they are far less complex. Instead of launching a $3 billion mission once every ten years, NASA can launch a $200 million mission every year and save much money in the process. They provide many more opportunities to be innovative, to develop new technology, to involve students, and to do excellent science. We benefit from smaller missions only if we fly enough of them and plan them efficiently. With frequent launches, the technology and knowledge learned in earlier missions can be improved upon with each new mission.

These smaller missions provide many more opportunities for wide dissemination of knowledge to the citizens paying for them. In addition, by operating some of them from universities there are far more opportunities for students to be involved.

### Mission Operations and Data Analysis (MO&DA)

Mission operations are a critical portion of the NASA Space Science budget, allowing us to reap the benefits of the high launch rate of recent years. Over the past several years, NASA has made substantial progress in cutting the costs of mission operations by removing redundancy, accepting slightly higher levels of risk, and taking advantage of modern data processing capabilities. We applaud these efforts and urge that NASA continue to seek out such efficiencies that will allow greatly increased returns from existing missions. Even with this progress, there are very serious shortfalls projected beginning in FY98, when drastic reductions are shown in Space Physics, and very significant reductions take place in Astrophysics missions. These reductions would essentially end NASA's participation in the International Solar Terrestrial Physics program, and other important research programs, just as the sun is moving to its activity maximum late in the decade. To close down a major solar terrestrial program on the threshold of the solar maximum makes no sense, and we urge Congress to work with NASA to avoid such a development.

For reasons unclear to us, about 40 percent ($250 million) of the MO&DA line in the Office of Space Science contains hardware activities related to new flight missions -- namely ground systems for planetary and astrophysics missions, as well as Hubble Space Telescope replacement instrument hardware. Such activities fall outside the usual understanding of MO&DA, obscure the activities supported by this line, and dilute the efficiencies achieved in the tracking of existing missions. In the interests of clarifying the NASA budget, we suggest that such hardware activities be carried on appropriately named lines.

### Competitive Grants (R&A) and Suborbital Program

The Space Science Working Group continues to strongly support the competitive grants program (R&A) line. The University community depends vitally on the R&A line and the suborbital program to support individual investigators and students; both provide the foundation for education, research, and the development of future missions. These programs provide the basis for asking the right questions for future flight missions, and often are the sources of the enabling technology for such missions.

The R&A and suborbital lines are extremely dynamic programs in which funds are fiercely competed and in which new ideas can gain support. Young, new principal investigators can enter into space research almost solely on the R&A line, and their fresh ideas form a crucial component of the grants selected for funding. The suborbital program has flown over 2,600 sounding rockets and large numbers of balloon payloads over the years. Since R&A grant durations are short (2-3 years), this program is constantly identifying and supporting bold new initiatives, making it perhaps the most efficiently used funding line in space science research. In the suborbital area, the relatively modest costs of each mission make it possible to experiment with new, risky technologies. An apparent decrease ($88.0 million to $69.1 million) in the suborbital program budget for FY97 is apparently due to moving some science activities from this line to the SR&T line, which was offset somewhat by moving the SOFIA effort into suborbital. The sounding rocket and balloon program funding appears to be nearly flat in FY97; we urge that these programs be given a long-overdue inflationary adjustment.

## OFFICE OF MISSION TO PLANET EARTH

The Office of Mission to Planet Earth (MTPE) has undergone dramatic restructuring over the past few years as the Earth Observing System (EOS) has been downsized from a 1990 program of large spacecraft carrying 30 instruments at a total cost of $17 billion, to the current 1994 version of 24 fundamental measurements provided by instruments carried on smaller spacecraft for a cost of $7.25 billion. Thus, over the past few years, this program has been thoroughly examined by both internal and external reviews, and scrubbed to achieve an efficient, minimum mission required to meet the programmatic requirements of the EOS. We urge that the EOS program proceed as planned.

Last year, we stated our concern that, after the current small Earth Probe missions are launched, this line will vanish. The FY97 budget commendably shows MTPE initiatives using small spacecraft in both the New Millennium series and the Earth Systems Science Pathfinder (Earth Probes). We recommend that these small, focused missions be supported. The MTPE R&A line suffered a $30 million decrease this year (to $145 million) that will have a very serious impact on university researchers. We strongly recommend that these cuts be restored, and that the R&A program be adjusted to match the rate of inflation in FY97.

## OFFICE OF LIFE AND MICROGRAVITY SCIENCES AND APPLICATIONS

Unlike the growth proposed for the Microgravity Science program budget, the Life Science program budget is targeted for a startling decrease of $35.6 million, including $5.4 million in R&A. This reduction is in excess of 20 percent over FY96. As mentioned earlier, the R&A line is an important entry point for new investigators, for support of university research and student training. This is particularly important now as the Life Science program is working to establish and maintain a user community as its program transitions into the Space Station era.

It is also important to remember that the Life Science program has a dual role to maintain within OLMSA. In addition to continuing to generate knowledge on the effects of gravity and spaceflight on living systems, this program is also responsible for the health and well-being of the crews that fly in space. These efforts have also had direct consequences on health care practices on Earth.

### Space Station Facilities and Utilization

The Life and Microgravity sciences R&A programs are entering a critical stage. Facilities and instrumentation for Space Station are emerging from the design phase and entering prototyping, final design, and fabrication phases. There is now little or no leeway for significant change in either science objectives or means.

Both Life and Microgravity sciences are moving ahead into the Space Station era by virtue of the participation in the Shuttle Mir program. Initial experiments in a number of disciplines have demonstrated the value of this early access to extended duration experiments that Mir affords. There has been excellent international cooperation and considerable mutual benefit at the scientific level and this bodes well for interactions on the International Space Station. There is, however, a great deal of uncertainty as to the impact of the recent changes in the Mir and Space Station programs. There is concern that utilization opportunities are being compromised, if not altogether lost. For example, the Centrifuge and Centrifuge Accommodation Module, cornerstone facilities for the Life Science community, have been put on hold.

## CONCERNS ABOUT THE OUT-YEAR BUDGET PROJECTIONS

The out-year projections released by the administration on March 19 are significantly lower than previous projections: $13.1 billion for FY98; $12.4 billion for FY99; and $11.6 billion for FY00. Such a precipitous decline in funding would severely damage or perhaps cripple the space science enterprise. NASA and the space science community have been working actively and creatively to cope with the desires of both the Congress and the Administration to reduce the costs of NASA's science programs yet maintain the quality of its product. By changing its emphasis to these small and moderate class missions, the Space Science program at NASA has adjusted its strategy to achieve an exciting, challenging, and world-class scientific program even while operating in a declining budgetary environment. We urge you to continue working with NASA and the Administration to increase out-year funding for the agency over the currently planned reductions.

## CONCLUSION

NASA and the science community have been working actively and creatively to satisfy the desires of both the Congress and the Administration to reduce the costs of NASA's programs yet maintain the quality of its product. In doing so, the science programs at NASA have achieved exciting, challenging, and world-class scientific programs even while operating in a declining budgetary environment. With the addition of a modest increase in the OSS suborbital program, we urge Congress to support the administration's request.

## PREPARED STATEMENT OF CORNELIUS J. PINGS, PRESIDENT, ASSOCIATION OF AMERICAN UNIVERSITIES

Mr. Chairman and members of the subcommittee:

My name is Cornelius J. Pings, President of the Association of American Universities (AAU), which includes 60 of North America's most prominent research universities. This testimony is also submitted on behalf of the National Association of State Universities and Land-Grant Colleges (NASULGC). Our two associations include universities and colleges in every state that perform the research and education projects funded by the National Science Foundation.

For 46 years, the National Science Foundation has served our nation by supporting basic scientific and engineering research and by promoting the development of new scientific and engineering talent. This support has yielded invaluable results, contributing to an improved quality of life for all Americans and strengthening our nation's economic competitiveness.

NSF plays a crucial role in the support of university research. Although NSF represents only 3 percent of the federal budget, it provides close to 50 percent of federal investment in academic basic research in nonbiomedical fields. Despite its small size, NSF has an extraordinarily large impact on American scientific discovery, as the only Federal agency with responsibilities that cover research and education in all science and engineering fields. Moreover, NSF accomplishes its mission with remarkable efficiency. Only 4 percent of the agency's annual budget goes toward its own internal operations. The remainder, 96 percent, goes to support the actual conduct of research and education.

AAU and NASULGC are grateful for the bipartisan support for NSF shown by the members of this subcommittee through the years. As you prepare for markup of the Fiscal Year 1997 appropriations legislation for the foundation, we want to raise the following issues for your consideration: (1) the continuing impact of the federal government shutdown and uncertainty over the 1996 budget; (2) the administration's proposed funding levels for 1997; and (3) the proposed elimination of the Academic Facilities Initiative.

### Continuing Impact of the Federal Government Shutdown and Budget Uncertainty

As you know, because of the three-week federal government shutdown over the Christmas and New Year's holidays, followed by an additional week of work lost because of the January blizzard, the agency's usual efficient procedures were significantly disrupted. Panels, meetings and funding decisions were delayed. Some requested start dates could not be honored, and some gaps in funding occurred for successful renewal proposals.

Stable full-year funding is critically important for ongoing research programs, and many universities simply do not have the ability to make up federal shortfalls over an extended period of time. The unpredictable nature of scientific discovery requires a certain, steady funding stream, since experiments cannot be timed to produce results before an arbitrary cutoff date.

We know that members of this committee are working diligently to adopt a conference report on the FY 1996 omnibus appropriations measure. Even after funding levels for the balance of the current year are finally established, it is critical that we restore NSF's long-term stability. In this light, we hope the committee will do everything it can to provide strong funding for NSF in FY 1997. Stable funding is critical to the maintenance of a productive scientific research environment.

### NSF's Fiscal Year 1997 Budget Request

With the exception of its decision to propose termination of the Academic Facilities Initiative, discussed later, we believe the agency's FY 1997 budget request represents a good blueprint for continued scientific and academic excellence. As you know, the agency has requested $3.325 billion, which represents a 4.6-percent increase over the total FY 1996 estimate of $3.18 billion.

We are particularly supportive of NSF's request for Research and Related Activities (R&RA) , totalling $2.47 billion, an increase of 8.7 percent over the estimated FY 1996 level. Research support through the agency's R&RA account is truly the "meat and potatoes" of nonbiomedical research at our nation's universities. This funding level would represent a reasonable increase above inflation, with anticipated spending in future years to remain relatively flat.

In addition, requested funding for Education and Human Resources is $619 million, an increase of 3.3 percent over the FY 1996 estimate. Within the Education and Human Resources funding, we are especially pleased to see the agency propose that a new class of Graduate Research Traineeships will be funded in FY 1997 and the Graduate Research Fellowships program will be enhanced to allow an increase in the education allowance. We also support the agency's proposal for a new science education postdoctoral program for production of K-12 and undergraduate level professionals.

### Academic Facilities Initiative

While we support the agency's budget request, and appreciate the need to set priorities, we are disappointed in the agency's decision to propose termination of its Academic Facilities Initiative. AAU and NASULGC were involved in the development of this program, and we continue to believe there is a pressing need for investment in the modernization of university research facilities. While the $50 million provided last year for facilities under this program was relatively small in comparison to the need, it did pay for several competitively awarded and much-needed improvements. We continue to believe there is a federal role in support of research facilities, consistent with the direct support of research over a sustained period.

### Conclusion

Through its diverse programs, the National Science Foundation will continue to uphold the United States' world leadership position in science, mathematics, and engineering, and to promote the discovery, integration, and dissemination of new knowledge. Please know how much we, and our member universities, appreciate your continued support of this important agency.

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## PREPARED STATEMENT OF THE ASSOCIATION OF LOCAL HOUSING FINANCE AGENCIES, NATIONAL ASSOCIATION OF COUNTIES, NATIONAL COMMUNITY DEVELOPMENT ASSOCIATION, U.S. CONFERENCE OF MAYORS

Mr. Chairman and Members of the Subcommittee:

The Association of Local Housing Finance Agencies, National Association of Counties together with its affiliate, the National Association for County Community and Economic Development, the National Community Development Association, and the U.S. Conference of Mayors appreciate the opportunity to present their views on FY 1997 appropriations for the Department of Housing and Urban Development, and in particular the two priority programs of local governments -- Community Development Block Grants and HOME. Through this statement our organizations, composed of city and county government elected officials and practitioners, wish to articulate the critical importance of maintaining a continued federal commitment, in partnership with our members, in promoting neighborhood revitalization and expanding the supply of affordable housing in our nation's central cities, small towns and rural areas.

At the outset, we wish to commend you, Mr. Chairman and members of the Subcommittee, Republicans and Democrats alike, for your continuing support for priority local government programs. This is evidenced by your proposing to freeze pending legislation (H.R. 3019) funding levels for CDBG and HOME in FY 1996 at their FY 1995 levels of $4.6 billion and $1.4 billion, respectively.

We do, however, want to express our deep concern over, and opposition to, the proliferation of set-asides within the CDBG program. For FY 1996 a total of $180 million will be taken off the top of the appropriation for the Economic Development Initiative ($80 million), Youthbuild ($20 million), housing counseling ($12 million), public housing supportive services ($53 million), and the Tenant Opportunity Program ($15 million). To the extent these programs deserve to be funded, they should be funded separately. Making them set-asides has the effect of taking formula funds, which benefit many communities, and converting them into discretionary funds, which benefit a far fewer number of communities.

Having said this, we urge you to do all you can to bring to a close this week's negotiations over the final shape of the FY 1996 omnibus appropriations bill. Enactment of this bill will end the uncertainty and severe disruption caused by on-again, off-again Continuing Resolutions. For example, communities which use part of their funds for human service programs have had to scale back operations and stop accepting applications for assistance. Major housing and infrastructure activities have not gone forward because of uncertainty over whether funds will be available for their completion. These delays mean that some grantees will not be able to take full advantage of the construction season this year. Amending contracts and modifying work schedules in light of delayed or partial funding requires an inordinate amount of staff time and added expenses. The uncertainty adversely affects a community's ability to meet its performance objectives, and disrupts the consolidated planning process for subsequent year activities.

As to FY 1997 appropriations for CDBG and HOME, we urge you to again freeze their funding at the FY 1995 level. In order to truly freeze funding that is allocated to grantees for the fundamental purposes of these programs, we strongly urge you to resist including set-asides in either program, thereby retaining the flexible nature of these block grants. Recognizing that this is an era of limited resources at the federal level, we do not ask you to increase funding for HOME and CDBG, but to merely retain their current level.

The Administration has recently unveiled its "Reinvention II Blueprint" with as its centerpiece three performance-based funds: Community Development Block Grant Fund, the HOME Fund and a consolidation of the McKinney Act's homeless housing programs into a block grant to be known as the Homeless Assistance Fund. For FY 1997, the Administration is proposing to place greater emphasis on performance in these three programs. We endorse this emphasis on performance. Those receiving funding under these three programs should be required to meet not only statutory requirements but also be held accountable for meeting the goals set forth in their Consolidated Plans.

We do not, however, support increasing funding for CDBG, HOME and Homeless in order to fund new initiatives or create bonus pools. The $200 million that the Administration asks for CDBG would be earmarked for a new round of empowerment zones and $100 million for a performance bonus pool to fund large scale economic development or brownfields clean up. While perhaps compatible with the core program that we want to see maintained, they are nevertheless separate, new initiatives which would be competitively awarded based on national criteria instead of locally driven measures as in CDBG. Again, to the extent there is merit in them, these programs should stand on their own and not be subsumed under CDBG.

Similarly for HOME, the Administration proposes to fund housing counseling as a $15 million set-aside and add $155 million to create a performance bonus pool whereby communities would create homeownership zones to expand homeownership opportunities. Here again the Administration is creating a new program to be subsumed under HOME. To the extent that homeownership zones might be a good idea, they should be funded on their own, but only after level funding is achieved for CDBG and HOME.

With respect to consolidation of the homeless housing programs, we do support their being converted into a formula-driven block grant. To be an effective program and provide communities with an adequate allocation of funds, the program should be funded at not less than $1 billion. Thus, instead of supporting a $300 million bonus pool on top of the $823 million budget request, we would urge that the Subcommittee approve an appropriation of $1 billion for the new consolidated program. This would restore homeless housing funding to the FY 1995 pre-rescission level.

Celebrating its 22nd year, having been signed into law by President Gerald Ford in 1974, the CDBG is the federal government's most successful domestic program. The CDBG program's success stems from its utility, i.e., providing cities and counties with an annual, predictable level of funding which can be used with maximum flexibility to address their unique neighborhood revitalization needs. According to HUD, more than 90 percent of total expenditures are for activities benefitting low- and moderate-income citizens and their neighborhoods. HUD's most recent statistics (1990) indicated that 40 percent of that year's funds supported housing activities, 21 percent went to public works activities, 11 percent to economic development, 9 percent to public services, and the balance to acquisition and clearance of land and blighted structures, and program planning and administration.

But don't take our word as to the program's impact. A recent two-year study of the CDBG program by the Urban Institute concludes that in its twenty years' existence the program has brought " . . . important contribution[s] to city community development, including demonstrated successes in achieving local neighborhood stabilization and revitalization objectives." The Urban Institute believes that in virtually every city, neighborhoods would have been affected detrimentally had CDBG not been implemented. The Institute claims that "the CDBG program works most effectively when communities practiced concentrated investments, linked housing, economic development and social service spending, and invited citizen participation in neighborhood planning efforts." This strategy of comprehensive treatment of neighborhoods is greatly facilitated by the Administration's Consolidated Plan requirements. The study also found that CDBG programs clearly benefit those for whom the program was intended, low- and moderate-income persons and neighborhoods, and does so to a substantially greater extent than the minimum (70 percent) required by law. The Urban Institute correctly characterizes the program as the federal government's primary means to support local efforts in the stabilization and restoration of deteriorated neighborhoods.

Like CDBG, the HOME program is producing very positive results in expanding the supply of affordable housing. Enacted as the centerpiece of the 1990 National Affordable Housing Act and signed into law by President Bush, the program was initially mired by many legislative provisions which thwarted its effective implementation. After a series of legislative changes designed to facilitate effective implementation in 1992, and regulatory actions by Secretary Cisneros and his staff, the program really took off in January 1993.

Since then the progress in using the funds, and the uses to which they are being put, is most impressive. According to HUD, as of the end of February 1996, 75 percent of the $5.0 billion appropriated for FY 1992-1995 has been allocated, and 48.9 percent has been disbursed. This translates into commitments for 83,820 projects containing 178,499 affordable housing units. Nearly 58 percent of the funds support rental housing, the bulk of which have been rehabilitated, as the statute directs. Twenty-seven percent of the funds support new home construction, while 20.8 percent of that amount supports first-time homebuyers through acquisition or new construction. A little more than 3 percent of the funds are being used for tenant-based rental assistance. For every HOME dollar, an additional $1.83 in non-HOME funds is leveraged. From this it is clear that HOME is meeting the Congressional intent of expanding the supply of affordable housing with an overwhelming majority of the funds spent on rehabilitation and new construction.

HOME funds are also deeply targeted, well below the maximum of 60 percent of area median income for rental housing and 80 percent of area median for ownership housing required by the statute. Fully 84.8 percent of the rental units assisted with HOME funds go to those with household incomes below 50 percent of median. Of that, 48.4 percent are assisting those with incomes below 30 percent of median. In many areas 30 percent of median income is actually below the poverty line. On the homeownership side, 57 percent of the funds used for those activities benefit those at or below 50 percent of median income, 17 percent benefits those between 50 and 60 percent of median income, and 28.3 percent benefits those between 60 and 80 percent of median.

Mr. Chairman, local government officials believe that a strong Federal role in housing and community development programs must continue. Since the Housing Act of 1937, Congress has enunciated, and repeated in subsequent housing acts, that, as a matter of national policy, the federal government has an obligation to assist states and local government in providing decent, safe and sanitary housing for lower income households. Perhaps Congress said it best in a "Declaration of National Housing Policy" included in Section 2 of the Housing Act of 1949:

> The Congress hereby declares that the general welfare and security of the Nation, and the health and living standards of its people, require housing production and related community development sufficient to remedy the serious housing shortage, the elimination of substandard and other inadequate housing through the clearance of slums and blighted areas, and the realization as soon as feasible, of the goal of a decent home and suitable living environment for every American family . . . "

We submit to you that, while progress has been made toward this goal, it has not been fully achieved. The federal government must make a commitment to this national housing policy, backed up by the resources with which to continue the battle against neighborhood deterioration and a decaying housing stock.

Mr. Chairman, we look forward to working with you and the Subcommittee in adequately funding HUD's housing and community development programs.

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## PREPARED STATEMENT OF THE ASSOCIATION OF METROPOLITAN WATER AGENCIES

### Introduction

The Association of Metropolitan Water Agencies (AMWA) is a non-profit organization of the directors and managers of the nation's large municipal and publicly-owned water supply systems. AMWA's membership includes cities and municipalities from New Orleans to Salt Lake City, from Anne Arundel County to New York, and from Passaic Valley to Oklahoma City. AMWA members provide drinking water directly to over 95 million persons - almost 40 percent of the country served by public water systems - and indirectly to an even greater number through wholesale supply.

AMWA members are regulated by EPA under the Safe Drinking Water Act (SDWA) and other statutes, but receive no direct or indirect funding from the agency. As an association devoted to the protection of public health, safety and welfare through the provision of safe, high quality drinking water, AMWA strongly supports adequate levels of funding for the U. S. Environmental Protection Agency's drinking water and ground water programs.

## Request Overview

In an era of limited resources at all levels of government, it is critical for the federal government to take the lead in insuring that scarce funds are targeted to areas where very modest investments can deliver significant benefits for the public. This request outlines five such areas. The amounts requested are very small compared to the overall EPA budget request for fiscal year 1997, but are no less important because of their size.

There has been much discussion in Congress over the past year on shifting EPA's emphasis to the most significant public health and environmental risks. In the 1997 EPA budget, drinking water - and particularly the control of *Cryptosporidium* and disinfection byproducts - is called out as such a priority area. As the Congress has noted, when funding levels are tight, it is necessary to insure that resources are clearly focused on the basics. For drinking water, microbial protection is basic.

There has also been much discussion in the Congress of the need for the use of sound science in EPA decision making. Additionally, the Congress has been concerned with reducing unfunded federal mandates on State and local governments and returning programs to the States. Each of AMWA's fiscal year 1997 funding requests tracks and reinforces one or more of these themes. AMWA supports the Administration's request for $26.2 for drinking water research and specifically requests:

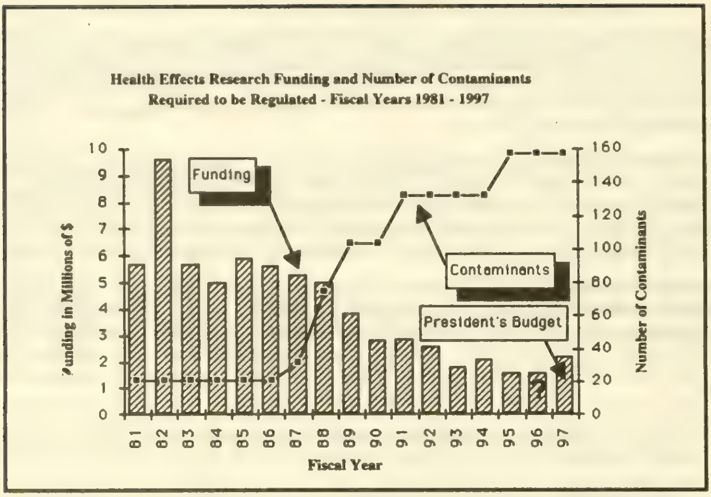
- Additional funding for drinking water health effects research on *Cryptosporidium* and disinfectants and disinfection by-products: $10,000,000.
- Additional funding for drinking water health effects research on arsenic: $4,000,000.
- Additional funding for continued support of the EPA/AWWA Research Foundation drinking water research partnership: $5,000,000 (to be matched dollar-for-dollar by the Research Foundation).
- Funding for state primacy grants: $90,000,000. (Public Water System Supervision Program Grants).
- Funding for drinking water contaminant occurrence tracking system development: $5,000,000.
- Funding for a drinking water State Revolving Fund: $1 billion.

## Background

Drinking water is universally recognized as a central element in the health and well being of our urban, suburban and rural populations. Moreover, it is essential to national growth and economic well being. Many are only now recognizing the ties of adequate, safe drinking water to economic prosperity as they witness the effects of drought, toxic spills, water shortages and aquifer depletion.

In 1974, Congress passed, and in 1986 amended, the Safe Drinking Water Act (SDWA). It placed the federal government squarely in an arena which had traditionally been the province of State and local governments. When enacting the statute, the Congress decided it was the federal government's responsibility to set national drinking water standards, mandate certain treatment techniques, assign responsibilities, administer discipline and allow state administration of the program. Unfortunately, resources commensurate with the mandate have never been committed by the Congress. EPA's Office of Ground Water and Drinking Water's present budget is essentially the same in constant dollars as it was in 1979, despite ever growing congressional demands on the program.

As requirements to regulate drinking water contaminants have grown dramatically, the drinking water health effects research budget has decreased precipitously as shown in the following graph.


Health Effects Research Funding and Number of Contaminants Required to be Regulated - Fiscal Years 1981 - 1997

## Small Investment - Big Benefits

Local communities, over the next ten to fifteen years, face a potential requirement to pay over $100 billion to meet new drinking water treatment requirements. Unfortunately they will face that prospect without knowing that the expenditures are wise, targeted to obtain the greatest possible benefits, or, indeed, even necessary. They will not know unless the lack of investment in drinking water health effects research is reversed. Although the above graph shows only the National Health and Environmental Effects Laboratory portion of the budget, other drinking water health effects research areas have seen similar declines.

Congress required through the Safe Drinking Water Act that the Environmental Protection Agency regulate contaminants in drinking water. When adequate health effects data is not available upon which to base regulatory decisions, those decisions are made, nevertheless, based on conservative assumptions, potentially costing millions of consumers billions of dollars for negligible or no measurable benefit.

Drinking water health effects research is, therefore, an area where the investment of a few million dollars can provide the knowledge necessary to prevent the potential waste of billions of dollars. On the other side of the coin, investments in drinking water health effects research help insure that the over 240 million people in this country served by public drinking water systems will receive protection from contaminants that do have significant adverse public health impacts.

Adequate investment in health effects research is the only way to insure that public health threats in drinking water are identified and the presence or absence of significant risk determined. The 104th Congress has recognized these facts through overwhelming bipartisan support for controlling unfunded mandates, focusing resources on the highest risks, and supporting the use of sound science.

This bipartisan support and the same three themes are stressed in S. 1316, the Safe Drinking Water Act Amendments of 1995 passed by the Senate by a vote of 99-0. Additionally the bill acknowledges the importance of drinking water health effects research by setting aside $10 million per year from the drinking water State Revolving Fund to focus research on *Cryptosporidium*, disinfection by-products, arsenic and subpopulations at risk. It also authorizes $4 million per year for arsenic research.

### Drinking Water Health Effects Research Funding

Research on *Cryptosporidium*, other microbial contaminants and disinfectants and disinfection by-products is a critical need. Each day there are 50,000 deaths in the world attributed to microbial contamination of drinking water. This threat has essentially been eliminated in the United States through disinfection efforts. The very act of disinfecting drinking water, however, can produce chemical by-products many of which are potential human carcinogens or may cause other toxic effects. Controlling risks from these by-products must be carefully balanced against microbial risks to ensure that when reducing disinfection levels to lower byproduct risk, the door is not opened to the significant microbial risks faced by the majority of the world's population.

Complicating this problem is the emergence of *Cryptosporidium* as a microbial pathogen of concern to drinking water supplies. The Centers for Disease Control (CDC) has pointed out that extensive research on the health implications of the pathogen and dramatic improvements in analytical methods for its detection are necessary before it is possible to evaluate the public health implications of its occurrence at low levels and determine the appropriate regulatory response.

Research on *Cryptosporidium*, disinfectants and disinfection byproducts, as supported by the National Academy of Sciences, CDC and EPA's Science Advisory Board, is essential. The nation's cost to address these microbial and chemical threats under the SDWA could be as low as several billion dollars or as high as $60 billion or more. An appropriate investment in health effects research will insure that costs fall in the proper place, and will not be driven to more conservative, higher cost levels because of lack of sound science.

In this regard, total funding and available personnel resources within the office of Science and Technology are inadequate to address microbiological concerns, both in conducting risk assessments and developing regulations. Additionally, the office's ability to advance risk assessment methodologies for both chemical and microbial contaminants, and thus the potential for more precise, protective and less costly regulations is severely constrained.

The regulation of arsenic provides a similar dilema. While the effects of arsenic at levels in excess of those typically found in the nation's water supplies are well studied, there is a serious scientific debate on the effects of arsenic, if any, at low levels typically found. EPA has outlined a research agenda to explore and reduce these uncertainties. AMWA strongly supports funding for this research.

AMWA would like to complement the Committee for funding a significant research partnership over the past few years. The Committee has provided resources to the AWWA Research Foundation on a dollar-for-dollar match basis. The funding has been used by the Research Foundation in conjunction with EPA to fund critical drinking water research. The partnership has proven to be an excellent way to leverage federal funds, and AMWA recommends that the partnership be continued in the FY97 appropriations bill. AMWA supports the Administration request for $26.2 million for drinking water research, and recommends the following specific additionsto that level:

- **Recommended Action In the FY 1997 Budget:** Provide $10 million funding for drinking water health effects research on *Cryptosporidium* and disinfectants and disinfection by-products as included in S.1316.
- **Recommended Action In the FY 1997 Budget:** Provide $4 million funding for drinking water health effects research on arsenic as included in S.1316.
- **Recommended Action In the FY 1997 Budget:** Provide $5 million funding for continued support of the EPA/AWWA Research Foundation drinking water research partnership (to be matched dollar-for-dollar by the Research Foundation).

### State Primacy Grants

To comply with the Safe Drinking Water Act, Congress intended that EPA develop drinking water regulations and that the States administer the program to insure compliance with and enforcement of its provisions. Administration, compliance, and enforcement activities are collectively known as "primacy" requirements, and federal grants to the States are known as Public Water Supply Supervision Grants. The massive demands on States arising from the Act have become increasingly apparent because of the dramatic increase in the number of regulated contaminants over the past few years.

As each regulation is added, State resource shortfalls become more acute. The SDWA authorizes a federal share of up to 75 percent, but federal funding has approximated only 35 percent. The difference between State and federal shares of the program has become so great that States have continuously been threatened with the loss of primacy. Should this occur, public health protection will suffer a major setback.

The Congress has acknowledged the magnitude of this unfunded federal mandates problem. The SDWA anticipated that the federal government would play a major role in funding State primacy - an anticipation that has not been met. EPA's budget request for FY96 would raise primacy funding from its present level to $90 million. AMWA strongly supports this increase as the minimum necessary.

- **Recommended Action in the FY 1997 Budget:** Provide $90 million funding for state primacy grants (Public Water System Supervision Program Grants).

### Drinking Water Information Management System

To comply with the Safe Drinking Water Act and its regulatory requirements, water systems must collect samples of their drinking water and have them tested for a variety of contaminants. These results are forwarded to State drinking water authorities who determine if a system has met its monitoring requirements and met the applicable drinking water contaminant standards. The State reports violations by water systems to EPA which maintains a national data base on compliance. Unfortunately, the data base system has proven completely ineffective for compliance purposes as reported by GAO in their June 1990 report "Drinking Water: Compliance Problems Undermine EPA Program as New Challenges Emerge". In addition, since the data base system only attempts to capture violations, it is of no use in providing information on occurrence of contamination, or providing drinking water quality data by contaminant, system or system class, state, geographic area, source water types, or other parameters. Neither is it able to show trends in any of those parameters. EPA is, therefore, hard pressed to meet even minimal program oversight, development, implementation, enforcement and evaluation responsibilities required by the SDWA. All of the data needed to meet requirements is available. It is gathered by drinking water systems at great expense and reported to states, and EPA needs the data to effectively manage the Public Water Supply Supervision Program and insure adequate protection of public health.

S.1316 and every Safe Drinking Water Act reauthorization proposal under consideration by the House acknowledges the fact that future drinking water regulations should include only those contaminants that actually occur in drinking water. An adequate contaminant occurrence data base will therefore be critical to meeting this objective.

- **Recommended Action in the FY 1997 Budget:** Increase Office of Water funding by $5,000,000 earmarked for development and initial procurement of an improved Public Water System Supervision Information Management System using modern computer hardware and software to systematically collect and maintain high-quality, timely and complete monitoring data.

### Drinking Water State Revolving Fund

The strong support Congress has shown for providing a drinking water State Revolving Fund (SRF) is clearly illustrated by the fact that funds have been appropriated for such a fund for the past three fiscal years in anticipation of a reauthorized SDWA. This strong support should be continued. S. 1316 would authorize a drinking water SRF at $1 billion per year. AMWA strongly supports the SRF, its uses, funding levels and requirements as outlined in the Senate bill.

- **Recommended Action in the FY 1997 Budget:** Provide $1 billion funding for a drinking water State Revolving Fund.

### Conclusion

AMWA sincerely appreciates the consideration the Committee has given to past requests, and urges the Committee to acknowledge the thrust of the current request - to apply funding to address those areas that the 104th Congress has, in a bipartisan manner, designated as priorities, and as appropriate and wise uses of federal resources.

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## PREPARED STATEMENT OF REED V. TUCKSON, M.D., PRESIDENT, CHARLES R. DREW UNIVERSITY OF MEDICINE AND SCIENCE

Mr. Chairman and members of the subcommittee, thank you for the opportunity to express the views of the Association of Minority Health Professions Schools (AMHPS).

I am Dr. Reed V. Tuckson, President of The Charles R. Drew University of Medicine and Science, and President of AMHPS. AMHPS is an organization which represents eleven (11) historically black health professions schools in the country. Combined, our institutions have graduated 60% of the nation's African-

American pharmacists, 50% of the African-American physicians and dentists, and 75 % of the African-American veterinarians, indeed a significant number of the minority health professionals in this country.

The AMHPS institutions have also educated a disproportionate share of the small number of African-Americans receiving doctorates in the Biomedical and other sciences. For example, 1989 only 17 PhDs were awarded in the Life Sciences to African-Americans. Of that number, 14 were conferred by historically black institutions: 4 (over 23%) of these doctoral degrees awarded to African-Americans were by Meharry Medical College. Since 1975, over 10% of all doctorates in the Biomedical Sciences awarded to African-Americans have been awarded by Meharry's School of Graduate Studies. In 1995, Meharry Medical College graduated 6 PhDs in the Biomedical Sciences, while Florida A&M University graduated 6 PhDs in Pharmacology and 1 PhD in Medicinal Chemistry. The numbers may seem small, but they are a significant representation of the contributions made by our institutions to the education of African-Americans at the graduate level in the Biomedical Sciences.

AMHPS has two major goals 1) to improve the health status of African-American and other minorities; and 2) to improve the representation of African-Americans and other minorities in the health professions. We are working toward achieving this goal by seeking to fortify our institutions and programs and to strengthen other programs throughout the nation that will improve the role of minorities in the provision of health care.

Agency for Toxic Substances and Disease Registry

Mr. Chairman, the Association of Minority Health Professions Schools is here to testify today in support of the Administration's recommended Fiscal Year 1997 (FY97') funding of $58 million for the Agency for Toxic Substances and Disease Registry (ATSDR). This funding level will allow ATSDR to continue to pursue a variety of critical substance-specific investigations of hazardous substances found in our nation's toxic waste sites.

We hope that by working together, we will soon be able to answer questions regarding the levels of exposure that pose significant human health threats as well as reduce the scientific uncertainty that exists in the public health risk assessment process. This program is also important because it is helping to strengthen our institutions' existing research capabilities in environmental health.

Toxic Substances and Minority Health

While there continues to be a rise in national concern and awareness of the problems associated with hazardous wastes, and the adverse environmental and health effects of toxic chemicals and other hazardous substances emanating from operating hazardous waste treatment, the specific concerns of minorities in this country remain largely unaddressed. It is an unfortunate fact that the minority populations in this country are increasingly likely to be the unknowing victims of exposures to hazardous substances in their communities and on the job.

The characteristics of communities with uncontrolled toxic waste sites are startling. In 1987, 3 out of every 5 African and Hispanic Americans lived in communities with uncontrolled toxic waste sites. Today, more than 15 million African-Americans, and more than 8 million Hispanic Americans live in communities with one or more uncontrolled toxic waste sites. Furthermore, roughly 1/2 of all Asian/Pacific Islanders and American Indians live in communities with uncontrolled toxic waste sites.

The statistics speak for themselves. The effects of exposure to hazardous waste on the people in our communities have been and will continue to be devastating. The repercussions this will have on the health of our nation's minority and general populations, is definitely cause for alarm. The high rate of infant mortality in the African-American community (twice the rate for white children), the growing disparity in health status and quality of life between minority and non-minority populations in this nation, and the excess deaths of African-Americans and other racial and ethnic individuals in our nation are among the numerous reasons why the AMHPS institutions have made a commitment to greater involvement in research to investigate the incidence, distribution and control of disease attributed to exposure to hazardous waste sites.

The AMHPS/ATSDR Cooperative Agreement

In 1993 AMHPS schools, coordinated by Minority Health Professions Foundation (MHPF), entered into a five-year cooperative agreement between the Centers for Disease Control and Prevention and the Agency for Toxic Substances and Disease Registry. Our institutions, which are historically black graduate institutions, serve as a natural pipeline to minority communities. The graduate and professional research that we conduct is a productive method by which the at-risk populations in the U.S. can be studied and taught.

The institutions of our Association have combined our expertise in studying the health problems disproportionately affecting minorities and our growing expertise in toxicology, with ATSDR's mission to study and document data gaps that exist in the 130 hazardous substances that occur in minority communities. The investigations conducted include studies in epidemiology, molecular toxicology, reproductive and developmental toxicology, exposure assessment, and neurotoxicology. Our project aims to address community health concerns, promote community education and outreach, and improve ATSDR community health assessment in minority and disadvantaged communities. By providing for substance-specific research, the results of this cooperative arrangement between ATSDR and AMHPS will foster a greater understanding of answers to crucial questions about the effects of the exposure to hazardous materials on these communities, and through which solutions can be developed.

At Tuskegee University School of Veterinary Medicine, the ATSDR/AMHPS initiative has provided a means by which investigators plan to study the reproductive effects of mercury in multiple generations of animals and the acute subchronic toxic affects of zinc. Findings by Tuskegee's scientists are expected to serve as indicators of long-term hazards that may be suffered by people whose parents and grandparents have been exposed to low levels of mercury and zinc for prolonged periods. At the Charles R. Drew University of Medicine and Science epidemiologic investigations are being conducted to determine whether elevations in blood pressure among African-American males is associated with environmental and occupational exposures to lead and whether this effect can be reversed by the removal of lead form the body. At Morehouse School of Medicine studies are being conducted to evaluate the effect of lead poisoning from the maternal infant relationship through early childhood. This research will assess the prevalence of lead exposure of minority children in Atlanta, Georgia and identify the sources and levels of lead exposure in the environment.

A complete and thorough understanding of the mechanism of action of various environmental pollutants is crucial for mitigating their toxic effects and for devising means to manage, decrease or reverse their negative health impact. In order to achieve this goal, studies are being conducted at Florida A&M University College of Pharmacy to elucidate the mechanism of toxicity of lead cadmium. Preliminary results have shown that lead affects key cellular enzymes which may be responsible for the development of some of lead's toxic symptoms. The findings of these studies may help in the development of a means to alleviate some of the toxic manifestations of lead.

In addition to the projects at Tuskegee, Morehouse, Drew and Florida A&M, investigations are in progress at other AMHPS institutions in cooperation with ATSDR. These projects involve studies of various environmental issues such as defining the toxicities and mechanisms of hazardous substances found at National Priority List Waste sites. It is not a coincidence that our institutions are located in close proximity to the very hazardous substance sites that are that subject of our research. We, the institutions of AMHPS, desire to use the findings of our research to work to increase the knowledge and understanding of the presence and effects of hazardous waste in our communities and in communities across this country.

## Summary

The AMHPS/ATSDR initiative is directed to supplement the substance specific needs of the public and the scientific community, especially as those needs apply to the minority community, and to supply necessary information for conducting comprehensive public health assessments for individuals living in the vicinity of hazardous waste sites.

By providing funding for the AMHPS/ATSDR initiative to conduct research at our institutions, Congress is aiding our schools in strengthening their existing research capabilities in the field of environmental health. With these factors in mind, the graduate and professional research being conducted in our schools is a productive method by which the at-risk populations of the U.S. can be studied and taught and through which solutions can be developed.

The Association of Minority Health Professions Schools supports a ATSDR funding level of $58 million for FY97, which includes $4 million for the AMHPS/ATSDR Cooperative Agreement. A funding level of $58 million will allow our institutions to continue to study substance-specific toxic wastes that plague minority communities and contribute heavily to the disproportionately poor health status among minority populations.

## PREPARED STATEMENT OF THE ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS

The Association of State Drinking Water Administrators (ASDWA) is pleased to provide written testimony to the Subcommittee. For FY-97, we strongly support the President's funding request of $90 million for the Public Water System Supervision (PWSS) Program and $26 million for drinking water research and respectfully request that $1 billion be appropriated for the proposed State Revolving Fund (SRF) under the Safe Drinking Water Act (SDWA). Together, these appropriations provide state drinking water programs the resources to implement SDWA requirements; public water systems the resources to achieve and maintain compliance with the Act; and funding to ensure that future regulations will be based on sound science.

In light of EPA's recently released "Redirection Initiative" which calls for a disinvestment in technical assistance to states, it is essential that states receive adequate appropriations funding to ensure continued public health protection through the drinking water program. State drinking water programs have been operating with significant funding shortfalls for the past ten years. In FY-95, the most recent year for which figures are available, states funded drinking water programs at a level of $126 million, nearly twice the Federal contribution, and still short of the projected resources needed to operate comprehensive state drinking water programs.

State programs have repeatedly been expected to bridge the gap between available funds and identified needs. On average, states contribute 65 percent of the resources available to implement the SDWA with the Federal Government contributing 35 percent. However, states are facing their own severe fiscal constraints. The dilemma is approaching crisis proportions. States are willing to assume greater responsibility for implementation of Federal requirements to ensure continued public health protection through the drinking water program. However, states cannot efficiently and effectively implement existing and future Federal requirements without adequate Federal funding support.

State drinking water programs have long held responsibility for administering and enforcing the requirements of the SDWA. Currently, the states regulate over 186,000 public water systems serving approximately 263 million people. These programs ensure that public health is protected from more than 88 naturally occurring and manmade contaminants such as organic and inorganic chemicals, pesticides, and a variety of waterborne pathogens. In support of these efforts, drinking water programs monitor water system performance, train staff, and work to improve data management systems. Additionally, state programs provide sanitary surveys, operator training and certification, engineering plan reviews, laboratory analyses, laboratory certification, technical assistance, enforcement, risk communication, emergency response, and disease outbreak investigation services.

Ideally, states would like to see an equal contribution from their Federal partner in public health protection for drinking water programs even though the SDWA authorizes Federal funding at levels up to 75 percent of the cost of the program. However, recognizing the limitations imposed by shrinking resources, ASDWA respectfully requests that the Senate Appropriations Subcommittee on VA, HUD, and Independent Agencies support the President's FY-97 budget request and make appropriation of $90 million for the PWSS program.

In 1995, the Senate recognized the need to streamline and improve the way Federal drinking water requirements are developed and implemented. S. 1316, the Safe Drinking Water Act Amendments of 1995, passed by a vote of 99-0. One of the key components of that legislation was establishment of a state revolving loan fund. Such a fund would be used to address the most significant threats to public health associated with public water systems by making available capitalization funds to upgrade or replace public water systems; provide much needed technical assistance and training to small drinking water systems; support source water protection initiatives; and facilitate system compliance with national primary drinking water regulations through new system construction or improvements.

A drinking water SRF is the most efficient mechansim to address the critical need of public water systems to improve their infrastructure. Compliance with basic public health requirements demands, at a minimum, adequate facilities and appropriate technology. A drinking water SRF also affords the opportunity to invest in prevention rather than remediation through source water protection programs, technical assistance, and training programs. The success of such initiatives is demonstrated by the wastewater SRF program which has been in operation for 10 years and supported by an additional 10 years of funding through the construction grants program. Like the wastewater SRF, initial capitalization of the drinking water fund must be sufficient to meet early demands while retaining adequate funds to sustain the revolving fund pool until loan repayments can accumulate.

In past years, the Senate Subcommittee has provided money for initiation of a drinking water SRF contingent upon SDWA reauthorization. Unfortunately, SDWA reauthorization has yet to occur. However, the Senate-passed S. 1316 calls for an SRF authorization of $600 million in Federal capitalization for FY-94 and $1 billion for each succeeding year through FY-03. Preliminary estimates indicate that drinking water systems will need more than $100 billion over the next 20 years to meet infrastructure needs. ASDWA respectfully requests that the Senate Appropriations Subcommittee on VA, HUD, and Independent Agencies appropriate $1 billion in capitalization funds for the establishment of a drinking water SRF.

Finally, ASDWA would like to indicate strong support for the President's budget request of $26 million for drinking water research initiatives. Sound science and better data improves early identification of contaminant threats, provides objective evaluation of relative risk, and focuses resulting standards on those contaminants of greatest public health concern. Research on pathogens such as cryptosporidium and contaminants such as disinfection byproducts is critical to ensure that resulting regulations are appropriately developed and implemented to protect the public health.

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ASDWA appreciates the opportunity to present its funding request for the Subcommittee's consideration. We would be pleased to answer any questions regarding this testimony or the needs of state drinking water programs and public water systems.

## STATE DRINKING WATER PROGRAM FACTS

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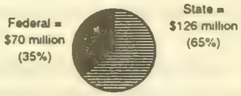
|---|---|---|
| **Number of States With Primacy** | | **49** |
| **Number of Regulated Public Water Systems** | | **186,822** |
| Community Water Systems | 58,747 | |
| Nontransient Noncommunity Systems | 23,639 | |
| Transient Noncommunity Systems | 106,436 | |
| **FY - 95 PWSS Contributions** |  | |
| **Core Components of State Drinking Water Programs** | | **compliance monitoring<br>sanitary surveys<br>laboratory verification<br>emergency response<br>operator training<br>operator certification<br>outbreak investigation<br>data management<br>staff training<br>enforcement<br>disease surveillance<br>risk communication** |
| **Number of Regulated Contaminants** | | **88** |
| Phase II - Organics | 30 | |
| Phase V - Organics | 18 | |
| Proposed/Interim Standards | 10 | |
| Volatile Organics | 8 | |
| Phase II - Inorganics | 8 | |
| Coliform and Surface Water Treatment | 6 | |
| Phase V - Inorganics | 5 | |
| Lead | 1 | |
| Copper | 1 | |
| Fluoride | 1 | |

## PREPARED STATEMENT OF HENRY FERNANDEZ, J.D., PRESIDENT AND CEO, ASSOCIATION OF UNIVERSITY PROGRAMS IN HEALTH ADMINISTRATION

Mr. Chairman and Members of the Subcommittee on VA-HUD-Independent Agencies Appropriations, my name is Henry Fernandez and I am the President and Chief Executive Officer of the Association of University Programs in Health Administration (AUPHA), based in Arlington, Virginia. I would like to thank you for the opportunity to submit written comments to the subcommittee to share with you the interests and concerns of health management educators that I am privileged to represent, as you consider your priorities for the FY1997 appropriations bill.

By way of background, AUPHA was established in 1948 and we represent nationally every accredited graduate and many undergraduate programs that educate and train both new practitioners and the evolving leadership in the health care delivery system in our country. We promote the latest, cutting edge practices in the diverse and constantly evolving field of health administration and management. In addition to our 100+ members in university programs, our membership also includes nearly 200 affiliate members that are primarily health care institutions and systems committed to the professionalization of the field of health care administration.

We are also privileged to boast the support of nearly 120 international programs, located in 50 foreign countries, which view our programs as world class and leaders in the profession. Indeed, when health care officials in other countries want to learn how to operate health care facilities, systems and networks, they look to AUPHA to provide them with the answers.

Our programs -- such as those at the University of Missouri - Columbia, St. Louis University, and Washington University in Chairman Bond's home state, or at The Johns Hopkins University in Senator Mikulski's hometown of Baltimore -- are international leaders in health management education. Graduates of AUPHA-member institutions are found at every level of our health care system. They administer some of our nation's largest, most complex -- and most successful -- health care institutions. Just as important, however, is the critical role that our graduates play throughout the system in smaller rural hospitals and clinics. Indeed, our graduates' expertise has been appreciated throughout the industry, and in state and local governments, as well.

AUPHA has also had a strong and productive relationship with the federal government over the years. For example, many of our programs are recipients of funding to support traineeships in hospital and other health care settings under Title VII of the Public Health Services Act, administered by the Health Resources and Services Administration in HHS. In addition, we work closely with the Agency for International Development, running programs to improve hospital and health care management in such diverse places as the Newly Independent States of the former Soviet Union, Jamaica, Latin America, and Paraguay.

As you can see, Mr. Chairman, AUPHA and our member programs represent part of a solid, practical investment in a cost effective health care system. Although the rate of increase in all health care costs -- including those of the Veterans Health Administration -- have declined in the last two years, those costs continue to drain our economy and our government of funds that could be better spent on the provision of additional services to those who require them. Our students and graduates, an increasing number of whom come with substantial clinical experience, are trained to run all elements of the health care system: hospitals, long-term care facilities, health maintenance organizations, rural and community health clinics, and other facilities and systems.

With all of this as background, I would like to turn to the reason for my submission of testimony to the subcommittee. In the current fiscal year, AUPHA and the Veterans Health Administration (VHA) have embarked upon an exciting new initiative that we both believe will result in substantial improvements in the management and functioning of the veterans health system, thereby leading to better care for veterans at a cost-effective level of expense.

Essentially, Mr. Chairman, what we are doing is a pilot program, a modest effort in which some of our nation's most outstanding health administration and management educators are working with the senior administrators of facilities and networks within the Veterans Health Administration to train them in the latest management methods, techniques and practices. In this program, we are working with the chief financial officers, chief planners, public information officers and other senior managers with significant line responsibility in the VA's facilities. In the current year, the VA has dedicated about $300,000 to this effort. We are hopeful that in FY1997 they will be able to do even more.

It is important to be a clear about one point with regard to this on-going effort. This training cannot and should not be done "in house" by other employees of the Veterans Administration. It simply defeats the purpose to have Veterans Health Administration employees training other Veterans Health Administration employees. Meaning no disrespect, they simply do not have the internal expertise and objectivity to improve the system they have been operating. That is why they reached out to AUPHA in the first place and that is why it is in this subcommittee's interest to support and advance this relationship.

In a soon-to-be-published white paper entitled, "Accountability for Health Care: A White Paper on Leadership and Management for the Health Care System for the United States," Dr. Eugene S. Schneller of Arizona State University (and a past Chairman of AUPHA) writes that a "....standard of excellence in management must be achieved for managers who are responsible for discrete operational units (e.g., departments within hospitals to group practices, and home health care agencies with the health system); and those who manage complex parts of vertically integrated systems (hospitals and long term care facilities); and those who are charged with managing at the upper levels of integrated delivery systems or networks."

While Dr. Schneller was specifically addressing the needs of the private health care system, his words are no less true for the Veterans Health Administration's system. Strong administration and management is especially critical in those areas where every dollar counts. And, there is nowhere that every dollar counts more than in those programs that are funded with taxpayers' dollars. Our programs train future practitioners, whether they happen to be 24-year-old graduate students seeking to break into the field or 54-year-olds that have been working in the health care system for thirty years and are seeking continuing executive education, to be effective and efficient managers.

Mr. Chairman, in the Committee Report accompanying H.R. 2099, the appropriations for the current fiscal year, this committee said that the "VA must begin to undertake major reforms in order to provide higher quality and more cost-effective medical care to veterans in view of the declining discretionary budget over the next 7 years coupled with a decreasing veteran population." We could not possibly agree more with that sentiment.

We believe that sound management training for the senior managers in the nations' largest health care system conducted by the leading academic experts in the country is a critically important reform that will assist the Veterans Health Administration in meeting the challenges of the Twenty First Century. Knowing of the Committee's dual interests in getting the largest bang for the taxpayers' buck, and its support for providing quality care to those dedicated men and women that have served our nation, I believe strongly that this is an effort that should and does enjoy widespread support.

Mr. Chairman, again, I would like to thank you for the opportunity to submit to the subcommittee this information about the efforts that the Association of University Programs in Health Administration is undertaking with the Veterans Health Administration to improve the management of the VHA facilities and networks. AUPHA stands ready to work with this subcommittee and the Congress in meeting the challenges presented in providing health care services to our veterans at this critical juncture in our history.

Thank you very much.

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## PREPARED STATEMENT OF THE CALIFORNIA INDUSTRY AND GOVERNMENT COALITION ON PM–10

**Mr. Chairman and Members of the Subcommittee:**

**On behalf of the California Industry and Government Coalition on PM-10, we are pleased to submit this statement for the record in support of our fiscal year 1997 funding request of $1.4 million in the EPA budget for the California San Joaquin Valley Region PM-10 Air Quality Study.**

The San Joaquin Valley of California and surrounding regions exceed both state and federal clean air standards for small particulate matter, designated PM-10. The 1990 federal Clean Air Act Amendments require these areas to attain federal PM-10 standards by December 31, 2001. Attainment of these standards requires effective and equitable distribution of pollution controls that cannot be determined without a major study of this issue.

According to EPA and the California Air Resources Board, existing research data show that air quality caused by the PM-10 problem has the potential to threaten the health of more than 3 million people living in the region, reduce visibility, and impact negatively on the quality of life. Unless the causes, effects and problems associated with PM-10 are better addressed and understood, many industries will suffer due to production and transportation problems, diminishing natural resources, and increasing costs of fighting a problem that begs for a soundly researched solution.

PM-10 problems stem from a variety of industry and other sources, and they are a significant problem in the areas that are characteristic of much of California. Typical PM-10 sources are dust stirred up by vehicles on unpaved roads, and dirt loosened and carried by wind during cultivation of agricultural land. Soil erosion through wind and other agents also leads to aggravation of PM-10 air pollution problems.

The importance of this study on PM-10 is underscored by the need for more information on how the federal Clean Air Act Amendments standards can be met effectively by the business community, as well as by agencies of federal, state and local government whose activities contribute to the problem, and who are subject to the requirements of Title V of the Clean Air Act. There is a void in our current understanding of the amount and impact each source of PM-10 actually contributes to the overall problem. Without a better understanding and more information -- which this study would provide -- industry and government will be unable to develop an effective attainment plain and control measures.

Our Coalition is working diligently to be a part of the effort to solve this major problem, but to do so, we need federal assistance to support research and efforts to deal effectively with what is essentially an unfunded federal mandate.

Numerous industries, in concert with the State of California and local governmental entities, are attempting to do our part, and we come to the appropriations process to request assistance in obtaining a fair federal share of financial support for this important research effort. In 1990, our Coalition joined forces to undertake a study essential to the development of an effective attainment plan and effective control measures for the San Joaquin Valley of California. This unique cooperative partnership involving federal, state and local government, as well as private industry, has raised more than $12 million to date to fund research and planning for a comprehensive PM-10 air quality study. Our cooperative effort on this issue continues, and our hope is that private industry and federal, state and local governments will be able to raise an additional $12 million over the next three years to fund this important study.

To date, this study project has benefitted from federal funding provided through USDA's, DOD's and EPA's budgets. In fiscal year 1993, $330,000 was provided through an EPA grant. In fiscal year 1994, a total of $2.85 million was appropriated for the study. In fiscal year 1995, $1.14 million was appropriated for PM-10. For fiscal year 1996, a total of $1.65 million was appropriated.

The following is a list of PM-10 research projects which are in progress:

- PLANNING
  Development of products for emissions, field monitoring, data analysis and modeling

- TECHNICAL SUPPORT STUDIES
  Suitability of data base; Winter/Autumn intensive study; micrometeorological parameters; fog formation/dissipation; ammonia from soils

- MODELING
  Demonstration of modeling system for application in SIP's

- DATA ANALYSIS
  Analysis of existing data to aid project planning

- DEMONSTRATION STUDIES
  Almond, fig, walnut, cotton, harvesting; unpaved agricultural roads; unpaved public roads; unpaved shoulders of paved roads; dairies, feedlots, poultry, dry cereal grain

**For fiscal year 1997, our Coalition is seeking $1.4 million in federal funding through the U.S. Environmental Protection Agency to support continuation of this vital study in California. We respectfully request that the Appropriations Subcommittee on VA, HUD and Independent Agencies provided this additional amount in the EPA appropriation for fiscal year 1997, and that report language be included directing the full amount for California.**

The San Joaquin Valley PM-10 study will not only provide this vital information for a region identified as having particularly acute PM-10 problems, it will also serve as a model for other regions of the country that are experiencing similar problems. The results of this study will provide improved methods and tools for air quality monitoring, emission estimations, and effective control strategies nationwide. Consequently, the beneficial results of this study will contribute to national policy concerns as well.

The Coalition appreciates the Subcommittee's consideration of this request for a fiscal year 1997 appropriation of $1.4 million for EPA to support the San Joaquin Valley Region PM-10 Air Quality Study.

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## PREPARED STATEMENT OF WILLIAM G. THILLY, DIRECTOR, CENTER FOR ENVIRONMENTAL HEALTH SCIENCES

My remarks are intended to provide the rationale for funding the Superfund Hazardous Substance Basic Research Program (SFBRP) at the $40 million level for Fiscal Year 1997. This program is currently part of the reauthorization process within the larger Superfund bill for fiscal years 1996-2000.

Communities near hazardous waste sites want to know if chemicals are reaching their water or air supplies. They want to know if low levels of these contaminants effect theirs and their children's health and they want something done about it. Our universities are responding with technology driven research efforts which are results oriented.

Recognizing that America's diverse geography and history of industrial and community practices creates special challenges, multidisciplinary research teams have been developed under this program at 17 different universities in 12 states. The interaction, common goals, and know-how exchange among these teams are among the most highly developed in United States environmental science and engineering. A map of the United States showing the location of the program is appended to this testimony.

The SFBRP was established under the Superfund Amendment and Reauthorization Act (SARA) of 1986. Funding for the Program is passed through the U.S. Environmental Protection Agency (EPA) to the National Institute of Environmental Health Sciences (NIEHS) as established in Sec 311which is part of the National Institute of Health (NIH), The NIEHS administers the SFBRP. The program provides peer reviewed, multidisciplinary grants for scientists from the biomedical sciences, engineering, ecology, and the geosciences to work together in multidisciplinary teams and seek the knowledge necessary for effective responses to local hazardous waste deposits.

Investment in basic public health and protection research is not supported by those government officials who most need adequate knowledge to form science based public policy. EPA administrators have continuously recommended severe cuts or even elimination of this basic research program. Their FY 97 request is $27 million, a reduction from the FY 95 appropriation from this Sub-committee of $35.6 million. They have alleged that EPA has sufficient technological and analytical capability to assess health risks in local communities and to perform effective clean-ups. Therefore, in their world view, basic research is not a high priority and thus EPA feels it can "disinvest" in basic, independent university research. Nothing could be further from the truth.

Our society is gridlocked on the issue of risk assessment because there has been a lack of investment in the basic science necessary to determine which environmental chemicals really get into us and which ones foul up our genes, mimic our hormones or otherwise interfere with the normal processes of life. When chemicals enter the complex mixture of soil and water of our underground water supplies their ability to work into nooks and crannies defies the best available "pump and treat" technology to pull them out in remediation efforts which must then be extended for decades instead of years.

Unfortunately, each Superfund site represents an expensive proposition just for assessment of what's there and where it is going. Nobody really knows how to translate a known low level of exposure into the probable human health effects. The present process called "quantitative risk assessment" is a sad parody of scientific process and has little chance of protecting the public health when used in decision making processes. Existing methods for cleaning up waste sites are both expensive and in nearly all cases ineffective, especially when large quantities of soil and ground water are contaminated. Current assumptions in risk assessment are both highly conservative and uncertain. The kinds of research supported by the SFBRP may reduce this uncertainty and could in most cases show that the public health is protected with less extensive or no clean-up. Thus, the research supported in this program may provide billions of dollars of savings to industry, government and society.

The primary objectives of the SFBRP directly address these public needs:

- The development of more rapid and effective strategies for detecting, measuring and charting the movement of both organic and inorganic chemicals and mixtures in communities of differing geological condition.;
- Place major emphasis on technology to detect these chemicals in humans and to analyze the effects, if any, in a way which allows unambiguous attribution of causality of disease;
- Have engineers and physical chemists collaborate to better understand how chemicals are physically trapped in soils so that effective clean-up strategies may be devised;
- Develop basic biological, chemical and physical methods and find means to integrate their use to reduce the amounts of hazardous substances reaching humans.

Most of us agree that an appropriate role of government is to protect its citizens. This small but prudent public investment is unlikely to be made by private individuals or corporations. With continued bipartisan support however, results of this basic research will be available to communities in all congressional districts. In the past, the Congress and the bipartisan unanimity of this Sub-committee, showed exceptional wisdom in providing the research funds in a way that required engineers, analytical chemists and molecular toxicologists to form cross disciplinary teams. Indeed, this investment allows us to train the very people who will be able to take the expected new technologies into the fields and watersheds of all congressional districts. If I may be permitted to paraphrase the late Speaker of the House from our 8th Massachusetts District ,'Tip' O'Neil, "All Pollution is Local".

The funding history of the program is shown below. Please note that the costs of administration at the National Institute for Environmental Health Sciences have been kept to 2.2% of the total appropriation..

| Year | Number of Programs (Universities) | Authorized Funding Level (in Million $) | Appropriated Funding Level (in Million $) |
|---|---|---|---|
| 1987 | 4 | 3 | 3 |
| 1988 | 4 | 10 | 5.9 |
| 1989 | 9 | 20 | 11.9 |
| 1990 | 11 | 30 | 16.7 |
| 1991 | 11 | 35 | 21.9 |
| 1992 | 18 | 35 | 31.1 |
| 1993 | 18 | 35 | 31.9 |
| 1994 | 18 | 35 | 32.9 |
| 1995 | 17 | 35.8 | 35.8 |

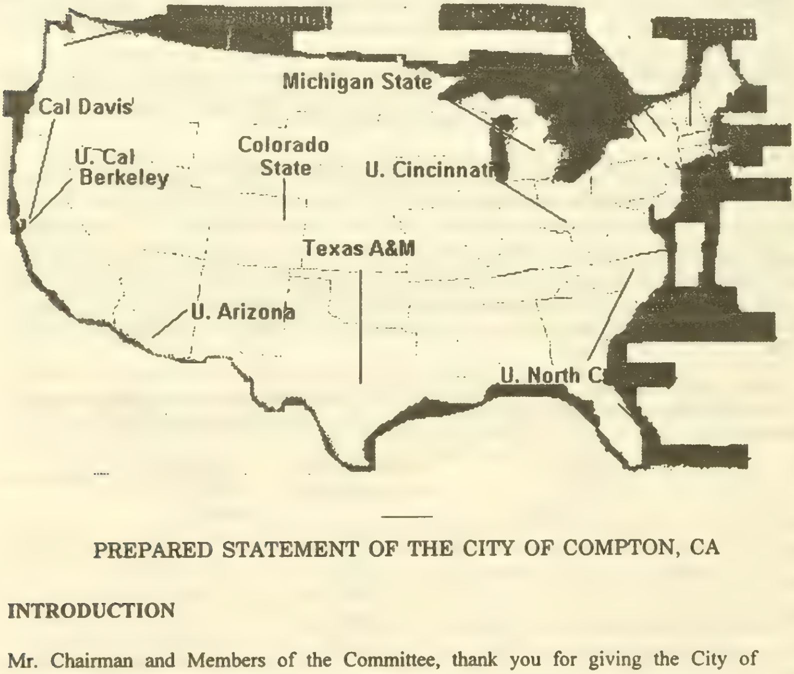
Breakdown of program expenditures, 1995:

| | | |
|---|---|---|
| NIEHS Extramural Grant Awards | $33,600,304 | (94%) |
| NIOSH IAG Extramural Awards | 1,400,000 | (4%) |
| Program Administration | 774,396 | (2.2%) |
| | $35,774,700 | |

We scientists and engineers involved in this program are a very small portion of this nation's research force much of which is supported by appropriations under the purview of this Subcommittee. But we are a large portion of the "hard" scientists and engineers who have chosen to move from laboratory and "model" systems to the communities around us where concerns about health are mixed with concerns about land development and use for future generations. It is not a comfortable area to practice science but it is a necessary one.

I thank you for your attention and urge you to invest in this university basic research program for the coming year at the $40 million level, a level which would allow a greater diversity of effort in more communities and to allow NIEHS to extend its funding for those advances already obtained which must be tried in the pilot studies before their real worth can be ascertained.

SUPERFUND BASIC RESEARCH PROGRAM SITES



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## PREPARED STATEMENT OF THE CITY OF COMPTON, CA

### INTRODUCTION

Mr. Chairman and Members of the Committee, thank you for giving the City of Compton, California an opportunity to present written testimony to the Committee as it considers the FY97 Appropriations bill for the Departments of Veterans Affairs, Housing and Urban Development, and the Independent Agencies. It is an honor to share the City's recommendations as you set the funding levels for a number of programs that support and enhance our efforts at the local level. Specifically, we want to encourage the Committee to fund the HUD and Environmental Protection Programs that support activities related to community and economic development, infrastructure improvement, housing rehabilitation and homeless services.

The City of Compton is a strong, resilient community fifteen miles south of downtown Los Angeles, with a solid heritage spanning 107 years. These 107 years have brought the winds of change and sometimes adversity, but the citizens of Compton have displayed a remarkable ability to overcome each hardship with new resolve and determination. Many outside the city are unfamiliar with the full breadth of Compton's story. Some only remember Compton as being one of the areas that experienced civil unrest following the Rodney King trial; while others identify the City only with crime and gang activity. There is, however, another side to the story. The vast majority of Compton's 91,000 residents are hardworking, law-abiding citizens who are dedicated to uplifting the community. Their actions have left an indelible impression on the fabric and structure of the City. As a result of this type of community involvement, Compton has experienced a reduction in violent crime and gang-related activity in recent years. Moreover, the year following the civil unrest, Compton was named as one of the top 25 large metropolitan submarkets in the United States for economic development.

Recently, Compton has had to endure a number of economic hardships that have tested the strength of the City. In addition to the City's on going struggle to recover from the destruction of 102 businesses and loss of 1,780 jobs as a result of the civil unrest, the severity of the Southern California recession, coupled with the high cost of doing business in the state, has exacerbated the economic situation. Furthermore, Compton has suffered from increased vacancies on its industrial properties due to the decline in defense and aerospace employment and the general downsizing occurring across industry lines.

In response to these economic concerns, City leaders have taken necessary steps to initiate programs that will spur the future of Compton's economic recovery and community growth. Under the leadership of Mayor Omar Bradley and the City Council, the City has developed an innovative strategic plan that would best utilize limited State and Federal funds needed to revitalize the community and prepare Compton for the challenges of the 21st century.

Known as the Compton General Plan-Vision 2010, this initiative outlines the City's revitalization through the creation of a desirable, safe and economically viable community that will provide quality, reliable services to its residents and businesses. In order to accomplish this, the General Plan is broken down into three particular focus areas: (1) Vision; (2) Revitalization; and (3) Stabilization. With proper vision, the City is able to make specific statements about how Compton should look and function by the year 2010. With revitalization, the City can highlight its positive aspects while conceptualizing improvements that can be achieved over a relatively brief period. Through stabilization, the search to outline and eliminate negative trends is pursued. Once these areas have been identified other problematic areas can be addressed, such as how to provide better services and housing opportunities, as well as strengthen the City's economic foundation.

If we are to be successful in implementing recommendations contained in this plan, assistance must continue from agencies like HUD and the EPA. Among the issues of concern to Compton are the following:

- Compton is approaching a buildout situation with little vacant land remaining for residential development.

- About 83 percent of the extremely low income households, 79 percent of the low income households, 68 percent of the moderate income households, and 52 percent of the middle income households experienced one or more housing problems in 1990. Housing problems include housing cost burdens, substandard housing conditions, and overcrowding.

- An estimated 1,500 to 2,000 owner units and 3,900 to 5,300 rental units occupied by low and moderate income households may contain lead-based paint hazards.

- Median age in Compton was 22.4 in 1990, significantly lower than the County median age of 29.8. Over 42 percent of the City's population was under 21 years of age in 1990.

- The City has an estimated homeless population of approximately 562 to 939 persons. Among these homeless persons, an estimated 20 percent may have mental problems, 60 percent may suffer from alcohol and drug abuse, 31 percent may be under the age of 18, and 15 percent may be infected with HIV.

- The unemployment rate is an estimated 15.7 percent.

- Most of the City's water infrastructure is over 50 years old. Substantial improvements are needed.

- Throughout the City, road surfaces, curbs, and sidewalks show signs of age and wear. Some street segments in the City have no sidewalks, curbs or gutters.

- Some trunk lines and collector sewer systems are operating at their full capacity. The need to replace and enlarge these systems is urgent.

## HOUSING AND COMMUNITY DEVELOPMENT

With this as background, the Committee can see clearly that the challenges we are facing are multifaceted and daunting. The role that HUD plays in helping Compton (and other cities) to address these issues is essential. In FY97, HUD is requesting $21.9 billion in funding. This is an increase of about $1.7 billion over the levels provided in FY96. A significant portion of this increase would go to the community planning and development programs. In fact, and increase of $300 million is proposed in order to support another round of Empowerment Zones and "performance bonus funding" for existing Empowerment Zone communities. The City supports the proposed increase. Compton also supports increased funding for the Lead-based Paint Abatement program, HOPE, HOME, Section 8, Drug Elimination, Assisted Housing for the Elderly, and Section 108 Loan programs.

*1. Community Development Block Grants* -- As the Committee prepares to establish funding recommendations for the Community Development and Block Grant program (CDBG), the City wants the Committee to know that this program has been extremely beneficial to the Compton community over the last 21 years. At a minimum, the City urges continued funding at existing levels. While Compton clearly needs more assistance, the City recognizes that significant increases in federal funding may not be possible; however, the City would suffer significant harm if funding were to fall below current levels. Unlike other funding sources, the CDBG program provides a stream of resources that provides for some flexibility and promotes comprehensive community planning and continuity of effort. With these funds, the City has constructed a badly needed park, procured new fire trucks, purchased and installed video camera monitors in our police vehicles, purchased in installed smoke detectors and security lights in the homes of senior citizens, built a community center, supported our code enforcement efforts, and helped rehabilitate deteriorated housing.

2. *The Section 108 Program* -- The Section 108 Guaranteed Loan Program is new to the City; however, we are excited about the ability to provide an additional financing vehicle to stimulate economic development in the City. The City recently was approved for a $5 million loan under this program. In addition to providing reduced interest loans to those projects that require gap funding, the loan also will be used for a number of strong, job producing economic development projects through the City's Economic Development Revolving Loan Program.

3. *HOME* -- The Home program has been instrumental in facilitating rehabilitation and new construction development opportunities for qualified non-profits as well as for-profit organizations in the City of Compton. From the program's inception, the City has been able to cause the rehabilitation of 56 single family units that have serious code violations. Also, non-profit organizations have rehabilitated 32 units that are now available for sale to low and moderate income first-time homebuyers. These organizations also have constructed 48 senior units. Eighty-two condominium units are under construction and 49 single family units are planned within the upcoming months.

The City also has designed a first-time homebuyer program to relieve the prevailing housing affordability crisis in the community. The Program included: a) Downpayment Assistance Program which provides downpayment up to $5,000; and b) a Second Mortgage Assistance Program which provides a subsidy that reduces the size of a first mortgage, which will enable individuals to qualify for the purchase of a home at an affordable level.

4. *Emergency Shelter Grant Program* -- This program has been instrumental in providing emergency shelter, education, food, counseling, and employment preparation for the area's homeless population. As a result of the Emergency Shelter Grant Program, area providers have targeted the eradication of homelessness in many ways. Emergency shelters have opened in the community because of the vast need and available resources through Compton and other matching sources. The City now has an area provider that takes in women with children so they do not have to be left on the streets during certain times of the day. Another provider addresses homelessness and alcoholism, and other shelters address male homelessness and family homelessness. All of the shelters that receive assistance are required to undertake tasks necessary to help the homeless population become a viable part of society through education, counseling, employment and housing referrals. Without such a program, the City would be unable to adequately serve its homeless population.

## ENVIRONMENTAL PROTECTION

Turning to EPA, the Administration has requested $7 billion, representing a $350 million increase over last year. Increases are requested for Clean Water State Revolving Fund (SRF). Through this program, low-interest loans to municipalities are made to ensure compliance with the Clean Water Act. Compton supports the proposed increases, and looks forward to having an opportunity to receive some of these funds.

Finally, the City of Compton asks that it be given an opportunity to work with the committee in crafting report language that would address some of the issues the City has raised and make available resources we need to develop viable solutions. Compton has developed the blueprint to be a model city for the future. In order to achieve this goal, however, the City of Compton needs your assistance, and the assistance of the Federal government.

Again, thank you for giving the City this opportunity to present its recommendations.

## PREPARED STATEMENT OF THE AUDUBON BIOMEDICAL SCIENCE AND TECHNOLOGY PARK OF COLUMBIA UNIVERSITY

Mr. Chairman and members of the Subcommittee, I am Dr. William A. Polf, Vice President for External Relations and Strategic Programs at the Health Sciences Center of Columbia University. I appreciate the opportunity to submit testimony to update the Committee on the progress of development of the Audubon Biomedical Science and Technology Park, located at the Health Sciences Campus, Columbia-Presbyterian Medical Center, in New York City. The Audubon Biomedical Science and Technology Park is one of the first urban scientific research parks dedicated to biomedical research and the development of a new biotechnology industry. Development of the Audubon Park is supported by a partnership between Columbia University, New York City, New York State, and the Federal government. The support of your committee has been critical in enabling this project to develop to the point we are at today.

Audubon combines three functions that together serve the national interest by providing a vital and innovative mechanism for providing health care to our citizens, while maintaining America's leadership in one of our most important economic sectors, biomedical research and development.

First, as a major center of biomedical research, Audubon provides a location for the continuing progress of biomedical science in the discovery of the root causes of many diseases and the development of the most advanced methods to diagnose and treat them. Specifically, the CDP will increase the scientific base at Columbia's world-class Health Science campus which currently ranks fourth nationally in total federal funding for biomedical and psychiatric research.

Second, as a center of technology transfer, Audubon offers facilities and programs for translating the discoveries of the scientific laboratory into the treatments that reach the bedsides of patients across the country. Audubon is the first research park in New York City, and one of the few in the nation devoted exclusively to housing academic and commercial biomedical research facilities to facilitate the efficient commercialization of biotechnology discovered and developed at the university.

Third, and of particular interest to your committee, Audubon provides a crucial instrument for the creation of new business and jobs in the economically depressed neighborhoods of Washington Heights and Harlem. Audubon will be a central element of the new Empowerment Zone program in New York, providing job training and business development services to the north Manhattan neighborhoods. Audubon will provide a center for enabling American biomedical science to generate new business in advanced pharmaceuticals and medical technologies, two cornerstones upon which the American economy can hold its own and grow in an increasingly competitive international business setting. By helping build the research and development base that provides a scientific and technological foundation for American business, Audubon will create new American jobs. In addition to this important economic stimulus, the health benefits from new discoveries at the Park will flow directly to the surrounding community which is characterized by high rates of illness associated with poverty, poor health, and urban distress.

When completed, the Park will consist of five research buildings, the restored Audubon ballroom, and a community center. The first building, the Audubon Business and Technology Center, is completed and is currently housing biotechnology companies. The second building, the Center for Disease Prevention (CDP) has received support from your Subcommittee and is currently under construction. The CDP is an integral component of the Park, as it will have the capability to formulate a new treatment concept or technology, develop it in the laboratory, test it in a clinical settings, and, in conjunction with industry, transfer its benefits to the general public. When completed, the CDP will house more than $25 million in research annually, supporting 400 new jobs. When all five facilities in the Park are developed, nearly 2,500 new jobs will have been created, including scientific, research, laboratory, clerical, administrative, retail, and building operations and support.

Development of Audubon has come a long way, and we are currently only $20 million away from obtaining the necessary funds to complete the CDP which represents the cornerstone of Audubon. In light of this, I respectfully request that your committee dedicate $10 million for Fiscal Year 1997 from your Subcommittee's Special Purpose Grants Program as authorized under HUD's Community Development Block Grant Program.

Thank you for the opportunity to provide testimony to the Subcommittee.

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## PREPARED STATEMENT OF HOWARD J. SILVER, PH. D., EXECUTIVE DIRECTOR, CONSORTIUM OF SOCIAL SCIENCE ASSOCIATION

Mr Chairman and Members of the Subcommittee

I am Howard J Silver, Executive Director, of the Consortium of Social Science Associations (COSSA) COSSA represents almost 100 professional associations, scientific societies, universities and research institutes concerned with the promotion of and funding for research in the social, behavioral and economic sciences (SBE) COSSA functions as a bridge between the research world and the Washington community A list of COSSA's Members, Affiliates, and Contributors is attached

I also currently serve as the Chairman of the Coalition for National Science Funding (CNSF) an umbrella organization of over 80 groups in the social, behavioral, physical, and natural sciences, engineering, higher education and the industrial world CNSF is dedicated to ensuring sufficient federal support to maintain the National Science Foundation as the premier basic science agency in the world On March 19, CNSF sponsored an exhibition at which almost 50 groups displayed the results of NSF supported research. Attended by more than a dozen members of Congress and over one hundred congressional staffers, the event demonstrated the importance of how support for basic research has produced important knowledge that has been translated into many successful products and policies.

I want to express COSSA and CNSF's appreciation for the Subcommittee's past strong support for NSF. We hope the additional $40 million for research and related activities will survive the negotiations on the FY 1996 omnibus appropriations bill On behalf of COSSA, I also want to thank Chairman Bond and Senator Mikulski for their strong support for the social, behavioral and economic sciences during last year's Senate debate on the NSF appropriation.

The 21st Century is four years away. The future economic base of this country four decades from now will be based on the investment decisions we make now One of the best investments the U S. can make is in basic research and scientific education The next century will belong to those who are scientifically and technologically educated to meet the political, economic, and social challenges that await us. The investments in basic research of the past 50 years have paid off enormously in the maintenance of the U.S as the major economic and political power in the world We are on the verge of an age of new exciting discoveries. However, with the restrictions on discretionary spending, if investments in science are not increased, we will continue to live off borrowed capital, rather than preparing for the future

Congress must sustain NSF's critical role in supporting basic research and developing the new talent to conduct the research Although representing only 4 percent of the federal research and development budget, NSF support for experiments and investigations into subjects without evident short-term payoffs has been vital to this nation's leadership in science and technology. Its capacity to maintain these efforts is essential

In addition, NSF remains a vital source of federal support for research in the social, behavioral, and economic sciences It continues to provide close to one-third of all federal support for these disciplines, over 60 percent of the support for academically-based basic research in the social sciences, and over 90 percent in such areas as archaeology, political science, and linguistics.

### The FY 1997 Budget Request

The President proposes $3 325 billion NSF in FY 1997 This increase is slight Compared to the FY 1995 actual level of spending, this is an increase of only $54 million or less than 2 percent With inflation factored in, NSF has lost funding in the past two years This is not the way to enable the future Since the final FY 1996 appropriation is still unknown, comparisons are difficult. The proposed increase will either be $145 million or $105 million, depending on the fate of the $40 million proposed addback.

The tough sledding facing discretionary spending has forced NSF to make tough decisions about balancing NSF's portfolio NSF and the administration continue to give highest priority to supporting individual investigator research For FY 1997, NSF requests $2 472 billion for its research and related activities account. This increase of $158 million (assuming the $40 addback survives) would allow NSF to strive toward its goal of upholding world leadership in basic research

However, even here the increase is not what it appears to be. Of the $158 million, $50 million represents the absorption of the instrumentation program into the R&RA account. The NSF and the administration have made a decision to move NSF out of the facilities restoration business. NSF will continue to support large scale facilities, such as LIGO and the restoration of the South Pole experiment station, but it will not try to spend insufficient funds to solve the inadequacies of our nation's research facilities. In this climate of zero-sum decisions within agencies, NSF's contribution to this effort has become negligible and take away vital funds needed for research.

COSSA supports this decision, but wants the Committee to understand that by moving the instrumentation program into R&RA, the increase for basic research from FY 1995 is about 6 percent, just about keeping up with inflation the past two years. Again, not a good way to enable the future. **COSSA advocates increasing the request by another $50 million, to make a true increase of $158 million over the addback figure.** This would, of course, increase the bottom line by $50 million as well.

COSSA supports the increase for the Education and Human Resources Directorate. We continue, however, to be disturbed that the budget for research in the Division of Research, Evaluation and Communication remains level funded. We are encouraged that the Division of Undergraduate Education has decided to include the social and behavioral sciences in their review of undergraduate learning. NSF recently sponsored a useful workshop to provide input to the committee, chaired by Mel George, examining this topic. We look forward to the next iteration of its report.

Since NSF has been the major source of support for graduate students in the SBE sciences, we strongly support the $8 million increase for graduate support in the proposed budget. This includes increased support for both the graduate traineeship program and the graduate fellowship program. NSF also continues its significant commitment to attract students from minority backgrounds into science, thus ending a significant waste of human resource potential. NSF needs to continue to help interest minorities in all sciences through their human resource programs

Basic Research in the SBE Sciences

In the SBE sciences, research continues to examine the ever more complex and important human dimensions of issues and generates new knowledge and insights to help us understand human commonalities and human differences Basic research in these disciplines also develops information that policymakers can use later to formulate solutions to individual and societal problems.

A number of examples:

- research supported by NSF awards underlies the market-based process now used to allocate portions of the electro-magnetic spectrum to various users. These auctions were based on NSF funded game theory research, and on recent investigations by Robert Wilson and Paul Milgrom of Stanford University. Charles Plott at the California Institute of Technology conducted tests of the FCC mechanism using laboratory techniques developed with NSF support.

- John Swets of Bolt, Beranek and Newman in Boston, uses his expertise in signal detection theory, a powerful tool for separating information from background noise, to help general practitioners improve their ability to detect breast cancer.

- Research on the provision of services in Australia by Gerald Rushton of the University of Iowa led to the development of analytical techniques for optimizing service sites in sparsely settled regions. The Iowa State Highway Department used Rushton's techniques to reorganize the locations of its maintenance facilities to save over $1 million per annum.

- Bruce Western of Princeton University contrasted low unemployment and declining real wages in the United States with high unemployment and wage stability in Europe. His research has produced concrete advice to CEO's on ways to reduce absenteeism, increase productivity, and maintain the prosperity of their labor forces.

- The Human Genome Diversity Project led by NSF's SBE Directorate will conduct a systematic, worldwide survey of human genetic variation. The results will increase understanding of human population history and human health, including variations among human groups in susceptibility to diseases.

- Elinor Ostrom, Indiana University Professor of Public Policy and President-Elect of the American Political Science Association, has devised ways for institutions to manage equitably common-pool resources such as fisheries, grazing grounds, and water supplies. Her techniques are widely applied in many aspects of economic and social life.

- Psycholinguistic research conducted by the Institute for Research in Cognitive Science, an NSF Science and Technology Center, revealed how children acquire new words. The results of this research have helped improve computer software written for such tasks as text to speech synthesis, machine translation, and speech recognition.

- John Anderson of Carnegie Mellon University determined how people learn and perform complex skills such as mathematics and writing computer programs. Computer based tutoring systems based on his research are now used to enhance training programs in mathematics by schools and the U.S. military.

- Ken Land of Duke, Patricia McCall of North Carolina State, and Lawrence Cohen of UC-Davis, developed a statistically robust method for linking social, economic and demographic conditions to FBI Index Crime rates across locations and time periods. Their consistent results provide a sound basis for allocating scarce criminal justice resources at the state, local and national levels.

In addition, large social science data collections supported by NSF, such as the Panel Study of Income Dynamics, the General Social Survey, and the National Election Studies (NES), have provided researchers information to study such issues as unemployment, economic decisions, family structure, non-voting, and many others that inform policymakers. The NES data sets are distributed to over 200 institutions of higher learning in all 50 states for both instruction in survey methodology and data analysis.

## New Thrusts in SBE Research

The proposed FY 1997 budget for the SBE directorate will move forward in areas where basic research has long been underway, but where additional support will enhance the effort. The new budget contains several new initiatives and the continuation of relatively new multidisciplinary centers for research, training and data dissemination. The proposed increase, although equal percentage-wise with the other directorates, suffers from inadequate real dollar increases, since the SBE base remains small.

SBE, in conjunction with many other NSF directorates, will focus resources on a Learning and Intelligent Systems Initiative (LIS). As part of a Foundation-wide effort linking computing, cognitive science, education, biology and other areas, this initiative will examine how both living and artificial systems process information. The research will build a foundation for progress in understanding learning processes in humans, machines, and human/ machine systems.

SBE will continue to support The Human Capital Initiative (HCI). This initiative, a coordinated, multi-disciplinary research effort, aims to advance fundamental theoretical knowledge about human behavior. Through coordination of research planning and methods and an increased focus on data dissemination, the results of this NSF-supported research will improve understanding of the processes by which experiences in families, schools and the workplace interact with biological and psychological factors to generate individual and community productivity.

Suggested by the research community and supported by Congress, NSF has established a National Consortium for Research on Violence. Arising from the recommendations of a National Research Council report, *Understanding and Preventing Violence*, the consortia will receive $2 million from the directorate in FY 1996 and FY 1997 to support a "center without walls" that will conduct multidisciplinary research to develop integrated theories of violent behavior, produce enhanced methodologies to investigate the problem, disseminate and cooperate with practitioners and policymakers, train future researchers, and generate knowledge about intervention and prevention strategies.

In collaboration with industry and the Engineering Directorate, SBE has developed a program called Transformations to Quality Organizations. Multidisciplinary teams are conducting basic research investigating how organizations can improve their management structures and quality controls to compete in the international economy. The research techniques include computer simulations and modeling, building interdisciplinary methodologies, developing benchmarks, on-site assessments, longitudinal data collection, and case studies.

SBE has also taken the lead supporting the National Center for Environmental Decision Making Research. The center is using economists, urban planners, policy analysts, sociologists, geographers, mathematicians, ecologists, psychologists, political scientists, and computer scientists, to synthesize data from existing research and to develop information tools for analysis of environmental issues.

The directorate has also provided support for a number of centers on the Human Dimensions of Global Change. These centers will permit multidisciplinary research collaborations on human responses to climate change. Topics may include such issues as how management changes adopted by farmers can mitigate damage to agricultural production from climate change or how information or uncertainty about environmental conditions can affect investment decisions.

SBE scientists are taking the lead in developing the performance measures and metrics to help agencies comply with the Government Performance and Results Act (GPRA). Using techniques that have helped to measure the economic and social returns on investment in scientific research, SBE scientists and their colleagues from other disciplines are exploring the issues raised by GPRA and its emphasis on accountability.

## Conclusion

The past year has been a difficult one for NSF. Uncertainty about its FY 1996 budget, the shutdown of the government, and the drive to balance the budget, have made planning hard and long term prospects ambiguous. Although support for basic science remains a high priority for this nation, NSF needs more support to keep the U.S. as the supreme innovator for the world. We urge the Subcommittee to provide NSF the extra resources it requires.

In addition, the human factor in many of our nation's problems and opportunities makes imperative continued generous support for the research conducted by social, behavioral and economic scientists. Science policy for the United States in the 21st Century must pursue an integrated strategy that focuses on the physical, natural, behavioral and social aspects of what it will mean to function in a technologically oriented society still dominated by interactions among human beings.

Thank you for the opportunity to present our views.

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# PREPARED STATEMENT OF COUNCIL OF LARGE PUBLIC HOUSING AUTHORITIES (CLPHA)

Mr. Chairman and Members of the Committee, CLPHA appreciates the opportunity to offer its recommendations for fiscal year 1997 funding for the public housing program. CLPHA consists of sixty-five large housing authorities throughout the country that manage over 40% of public housing. We are all in a strange time warp with the fiscal year 1996 appropriations still unsettled. However, the full Committee chair, you, and your ranking minority have done all you could to conclude matters. We are also grateful to you for your leadership in the fiscal year 1995 rescissions and the fiscal year 1996 appropriations, now embodied in H.R. 3019. It would be hard to think where the residents and managers of public housing would be without you. Thank you.

## Foreword

The public housing program -- after over a decade of major progress -- is threatened by deep funding cuts with reverting to its former state, too often foisting undesirable, unsafe, and often unhealthful living conditions on many of its 3.4 million inhabitants. These households choose to live in our apartments when their resources are limited, then moving up and on -- almost one-half have been in public housing less than five years. When admitted, this population was 31% elderly, 15% disabled, and the balance families, largely female-headed. 44% are children. These households are unquestionably the poorest of the poor. Even though 35% of the families work, the median household income in public housing is $5850.

Public housing was slashed $1.8 billion in the fiscal year 1995 rescission: $1.2 billion in essential modernization funds, $400 million in development. Its funding in FY96 -- limping from one Continuing Resolution to the next -- is either at the rescission levels: $2.8 billion for operating subsidies and $2.5 billion for modernization, or worse: no funds for additional development and $220, rather than $500 million for revitalization of severely distressed property. In FY97 -- HUD's budget, when examined, offers little improvement -- operating subsidies and modernization remain basically at the same inadequate levels, the latter gussied up with "performance bonuses." It is CLPHA' s calculation that between FY 1993 and FY 2000, the program will have lost $3.7 billion in operating support alone, assuming the best -- a hard freeze from now on.

An additional, but ignored, loss to public housing income arises from announced changes to the welfare system: in a state cited as the model for welfare reform, the major PHA estimates a loss of $150,000 in 1996 from the state's ending of general assistance for single persons and is estimating a further loss of $250,00 to $500,00 during the next 12 to 18 months due to residents that will have lost AFDC benefits but will have not found work. How is this situation to be addressed? Apparently not at all -- unless the rent loss is addressed by appropriations.

The impact is not just on public housing. Job losses in construction amount to 35,000 just from the FY95 capital reductions; the job loss from reduced operating subsidies is harder to calculate but they include those of residents employed by the PHAs -- in some PHAs as much of 30% of their payrolls are residents. The irony of all this is painful when Congress is wringing its hands over putting people to work.

It should be noted that while funds have been cut drastically, no changes have been made in the pervasive federal statutory requirements that control the economics of public housing.

We are grateful to the initiatives of Senators D'Amato, Bond and Mack in providing much relief in the Senate-passed "Public Housing Reform and Empowerment Act," S. 1260, and of Representatives James Leach and Rick Lazio for the even broader reforms in "The Housing Act of 1995," H.R. 2406, reported out, and can only hope that the best elements of these bills become law.

Similarly, we appreciate the relief offered in the vetoed Conference Report to the VA, HUD and Independent Agencies Appropriations, Fiscal Year 1996, whose provisions are largely repeated in the pending omnibus appropriations bill, H.R. 3019. In the meantime, PHAs are tottering monuments to the evils addressed by the Unfunded Mandates Act, P.L. 104-4.

We recognize and are ready to bear a fair share of the constraints that deficit reduction goals require. But that is not what happened in the rescissions of FY 1995 or in the appropriations for FY 1996. We urge that the upshot of those years should not become the new "baseline" for public housing. We also ask the Committee to recognize that our funding requests are for preserving an existing $90 billion national asset -- the public housing stock -- and not for launching new activities, that breed new obligations for the future.

Our recommendations for fiscal year 1997 are:

| | |
|---|---|
| *Operating Subsidies per Performance Funding System* | $3.3 billion |
| *Modernization* | $3.5 billion |
| *Reconstruction/Demolition/Replacement* | $300 million |
| *Development/Acquisition* | $500 million |
| *Drug Elimination Grants* | $300 million |
| *Incremental PHA-earmarked section 8 for:* | $300 million |
| •re-housing non-elderly disabled to make elderly-only buildings<br>•vouchering-out obsolete projects | |
| *CDBG support service setasides:* | $90 million |
| •services for elderly ($30m)<br>•welfare-to-work job training ($30m)<br>•youth job apprenticeship ($30m) | |
| *Section 8 Administrative fee:* | Fiscal Year 1995 level |

(Attachment A hereto compares the FY96 appropriation as embodied in the pending omnibus appropriations bill, H.R. 3019, the HUD budget request for FY97, and the CLPHA recommendations.)

### A. Operating Subsidies Are Essential To Serve Low Family, Elderly, and Disabled Households

Public housing is the nation's basic response to the statutory pledge of "a decent home...for every American family"; it is also, in the main, the least costly method of providing affordable shelter. for low income persons. See the GAO Report, *Public Housing: Converting to Housing Certificates Raises Major Questions About Cost*, June 1995. Operating subsidies are essential for success and are promised by the Housing Act in exchange for PHAs undertaking to serve the very poor persons they house. The Performance Funding System (PFS) is the government's statutorily-mandated formula for making up the difference between rents and the allowable expenses of a PHA. See section 9 of the *Housing Act of 1937*. Nationally, federally-controlled rents from public housing residents yield only 39% of the allowable expense levels to operate the system.[1] For fiscal year 1997, HUD's PFS calculation calls for $3.3 billion in operating subsidies to make up that gap. It is inexplicable that HUD's budget request ignores that figure and instead asks for only 87% of that amount. Since utilities, which must be paid, are 22% of the total expenses of PHAs, this cut cuts deeper than 13% into the non-utility costs of PHAs, especially where utility usage is high.

CLPHA calculates that between fiscal year 1993 and FY 2000, under the rosiest of future assumptions, public housing will have lost $3.7 billion in operating subsidies alone! The losers from operating subsidy cuts are the residents: maintenance, security, services all drop; and also the government: repairs are delayed, becoming more costly -- the HUD Modernization Needs Assessment in the mid-1980s found that almost 30% of the $25 billion backlog arose from deferred maintenance that deteriorated into capital needs.

PHAs in time -- and with release from the all-engulfing federal control -- can reduce the need for operating subsidies and improve the social quality of its developments (a) by seeking tenants with a broader mix of incomes but who are still well within the statutory maximums and (b) by eliminating costly practices, such as replacing centralized waiting lists with the private world's site-based lists. But these changes: *ending federal preferences, limiting those entitled to Brooke rents to the poorest, allowing ceiling and other flat rents, repealing one-for-one replacements, allowing a broader range of incomes to be admitted*, and many others must come. The sooner the decontrols, the sooner the reduced need for operating subsidy.

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[1] Not included in the PFS are over $200 million in annual uncovered expenses for employee health care and other fringes.

### B. Modernization Funds Should Be Restored To Make Properties Marketable and To Provide Replacement Reserves

CLPHA seeks $3.5 billion annually, $200 million less than the originally-appropriated amount for FY 1995. The request is based upon:

(a) findings by the National Commission on Severely Distressed Public Housing, establishing a $25 billion backlog of modernization needs, exclusive of the costs of reconstructing severely-distressed buildings and of required abatement of lead-based paints;

(b) the need to set aside at least $1.8 billion annually for replacement reserves to cover the normal need for replacements in modernized or otherwise viable buildings, such as new roofs, boilers, etc., a conservative 50 year rate of depreciation for the $90 billion public housing stock;

(c) a need to improve deteriorated buildings in order to appeal to a tenants with a broader range of incomes and to charge the higher rents needed to survive with reduced operating subsidies; and

(d) a reduction in past estimates based on the assumption that repeal of one-for-one replacements would lead to the demolition or disposition of ten thousand or so units in the next four or five years, reducing the earlier estimate of $4.5 billion annually to bring the stock to decent conditions within a decade.

### C. HOPE VI Has Shown the Way to Mixed Income "Public Housing"

CLPHA recommends $300 million for revitalization of distressed properties to continue the momentum among PHAs to "redeem" obsolete buildings and make use of existing low-income housing sites by reducing densities, updating and reconfiguring units for marketability and security -- in cases where such reconstruction would contribute to neighborhood improvement and stability. HOPE VI has spurred PHAs and developers to form public-private partnerships, to make greater use of private management skills, and to create more stable and less subsidy-dependent mixed-income communities. Significant public capital is now in process in major cities, so our request for fiscal year 1997 funding is limited; these new funds should be used both for winning proposals developed with past HOPE VI planning grants and for new entrants including from PHAs in cities less-populous cities than now eligible.

### D. Communities Should be Enabled to Replace Discarded Units

CLPHA recommends $500 million for the acquisition or development of new units, about six thousand units. PHAs will be readier to "toss in their losers" -- if the price for demolition and disposition is not one-for-one reduction in their stock. Under the new regime in public housing -- buildable to serve a broader range of incomes and less dependent on operating subsidies -- PHAs should be provided the capital to fulfill their responsibilities as the major housers of low income persons in their communities. PHAs are learning how to leverage this capital ("development funds") with other aids and other partners: tax credits, tax-exempt and private financing. The assurance of public housing is not necessarily that it will be publicly-owned and operated, but rather that the assisted units will remain in the public domain for low-income households for long periods of time.

### E. Public Housing's Residents, Mainly Female, Should Be Made Safer

CLPHA seeks $300 million for drug elimination grants for public housing. The operating subsidy's Performance Funding System, that dictates operating subsidy levels, is based on public housing operations in 1975 and does not reflect the need to provide security against current crime crisis. While local police are responsible to provide protection on streets and public ways, they have no responsibility to patrol the interior courts -- or the high rise apartments -- that so characterize public housing. Drug elimination grants have been the first attempt to make up for this gap -- and they have worked wonderfully to protect residents from outsiders, the main source of drug and criminal activity in public housing. Young residents have been led through fruitful activities away from violent behavior. Adults have been recruited into parent patrols to safeguard their children. Violence-prone adults have been used rehabilitated through alcohol and drug rehabilitation. PHAs have been enabled to gather the evidence to support evictions of offenders of good order.

The requested amount reflects an inflation increase. It is important to maintain funding. Programs that depend on tenant reliance and on trained staff cannot be turned on and off. Litigation and judgments for inadequate security can only be quelled by providing reasonable security in the first place. Security is especially important in public housing because of the large number of elderly residents.

### F. PHAs Seek Direct Setasides of Section 8 Assistance to End: (a) Mixed Populations and (b) Obsolete Buildings

CLPHA seeks $300 million in setasides to PHAs: $150 million for certificates to deal finally with the long-standing problem of mixed populations -- non-elderly disabled imposed on the elderly. It is especially unfair to house the young disabled population in buildings with the elderly in public housing on top of the 30% of their elderly contemporaries who are mentally disabled; (b) $150 million to relocate residents and replace obsolete units under pending bills requiring such action. CLPHA, of course, urges continuation of the unearmarked section 8 program to the highest degree possible after the fundamental funds for public housing and section 8 contract renewals have been provided.

(a) "Mixed Populations": to house and re-house non-elderly disabled persons in apartments elsewhere than in buildings originally intended for and now designated for the elderly. HUD's ruling that the elderly had to share their buildings with the non-elderly disabled, who frequently are coming from alcohol and drug treatment centers and mental institutions, has been a major disaster. $150 million would provide 4000+ five-year certificates to be offered to the non-elderly disabled to move out of elderly buildings or to use for new such tenants instead of moving into such buildings. It would all be voluntary, but no one doubts the choice that the young would make. The pending authorization bills will enable PHAs to produce an effective, equitable solution to this festering problem; the House bill has an express authorization for section 8 certificates to carry out the solutions.

(b) "Vouchering Out": the pending authorization and FY96 appropriation bills require PHAs to inventory their obsolete stock and plan for its replacement, among other ways, with section 8 certificates. These provisions will only be effective if the earmarked section 8 appropriations are provided.

## G. The Elderly, Welfare-To-Work Parents, and Unskilled Youth Need Support

CLPHA urges a setaside of at least $90 million in the Community Development Block Grant program for vital services (a) $60 million to prepare for employment residents, youth and adult, apt to be affected by welfare time limits and by changed rents in public housing; and (b) $30 million to meet the special needs of the elderly in public housing.

*Welfare Issues*: 46% of public housing families depend upon public assistance as their major source of income. All pending welfare reform proposals contain time limits on welfare benefits and assume that recipients will become employed before they become destitute. This is a desperate race for the welfare families -- and for the managers of public housing. PHAs have long done their share in providing employment; some PHAs draw as much as 30% of their work force from their residents. However, our unemployed residents must be enabled to work outside PHAs. Many PHAs have involved their residents in personal development and job training programs, such as youth apprenticeship training in conjunction with unions; the resources for this work must be continued and expanded. CLPHA urges separate $30 million pots for heads of households and for youth aimed at developing the employment skills. These funds would complement the "Moving to Work" initiative that is contained in the pending FY96 appropriations bills.

CLPHA also urges a minimum of $30 million for programs for the elderly in public housing, now 31% of our units -- 11% of the heads of households are over 80 years old. It should be aimed at buildings with mixed populations, help for the frail elderly, and congregate services.

## H. Section 8 Administrative Fees Should Be Maintained At Current Levels

Year after year, HUD seeks to cut the fee paid to PHAs for administering the section 8 program -- both by dropping the percentage and by lowering the level of fair market rents. However, it never produces any analysis supporting its positions. One would think that, after all these years, HUD could come forward with a documented analysis of what an equitable and effective fee system should be. Moreover, many large PHAs depend on earnings from the administrative fees to make up for the constant inadequacy of the operating subsidy. It should be worth noting that HUD never suggests that the operating subsidy be raised to overcome its agreed shortcomings. No reduction should be made in the administrative fee unless (a) it is based on an authoritative studies of the costs involved in administering the program *and* (b) of the true costs of operating public housing in the nineties.

## CONCLUSION

CLPHA believes that its foregoing recommendations for funding are minimums to fulfill our statutory obligations to our very poor and very vulnerable residents, as well as to protect housing assets in which the country has heavily invested over the years. Please help. Again, thank you.

## Attachment A

## Budget Comparison Chart

| | *FY96 Appropriations* | *HUD FY97 Request* | *CLPHA FY97 Recommendations* |
|---|---|---|---|
| *Operating Subsidies* | $2.8 b | $2.9 b | $3.3 b |
| *Modernization* | $2.5 b | $2.4 b[1] | $3.5 b |
| *Reconstruction/Demolition/Replacement* | $280 m | $325 m[2] | $250 m |
| *Development* | 0 | 0 | $500 m |
| *Drug Elimination Grants* | $290 m | $290 m | $300 m |
| *Incremental PHA-earmarked section 8 for:*<br>-rehousing non-elderly disabled to make elderly-only buildings<br>-vouchering-out obsolete projects | $400 m/ 2 yrs.[3] | $290 m/ 1 yr. | $300 m/ 5 yrs. |
| *CDBG support service setasides:*<br>-services for elderly ($30m)<br>-welfare-to-work job training ($30m)<br>-youth job apprenticeship ($30m) | $53 m | 0 | $90 m |
| *Section 8 Administrative fee:* | FY95 level | base reduced | FY95 level |

## PREPARED STATEMENT OF KRISTIN SIGLIN, THE ENTERPRISE FOUNDATION

Chairman Bond, thank you for the opportunity to present the views of The Enterprise Foundation on funding for housing and community development programs.

### The Enterprise Foundation and Nonprofits

The Enterprise Foundation is a nonprofit organization founded by Jim and Patty Rouse in 1982. Our mission is to see that all low-income people in the United States have the opportunity for fit and affordable housing, and to move up and out of poverty into the mainstream of American life.

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[1] HUD's FY97 budget requests a "Capital Fund" of $3.2 billion with setasides of $2.5 billion for modernization, $200 million for Indian Housing development, $500 million "bonus fund" for high-performers; there are $93 million in 4 non-modernization setasides from the $2.5 billion in modernization funds.

[2] HUD's budget calls for $650 million for "Severely Distressed Public Housing" but only up to half that amount can be used for reconstruction or replacement.

[3] The FY96 appropriations bill, H.R. 3019, earmarks for section include CLPHA's recommendations, among others.

We work with more than 550 nonprofits in 153 cities by providing loans, grants, and technical assistance. Enterprise works with groups to enlarge their capacity to provide low-income housing and help them build local partnerships. We provide nonprofits with loans at below market interest rates and offer predevelopment and acquisition financing. This working capital is otherwise difficult for nonprofits to obtain. We offer guidance on how to link human support services to housing. Enterprise also provides expertise in project financing, development and property management.

Enterprise works with community-based nonprofits because they serve very poor people and understand the unique needs of their neighborhoods. The sustained commitment of community-based organizations to these neighborhoods makes them ideally suited to undertake community development activities. In general, nonprofits have the flexibility to work in declining real estate markets, to do small scale housing development and to link social services to housing. Nonprofits have a different set of incentives and thus can do the work no one else wants to take on.

Over the past decade, the nonprofit housing industry has expanded significantly both in production capacity and in sophistication. Nonprofit housing groups can now be found in all fifty states, in urban and rural areas from Portland, Maine to Portland, Oregon. Although there is no precise count, we estimate that there are 3,000-5,000 community-based nonprofits working in neighborhoods across the country. Collectively, nonprofits have renovated hundreds of thousands of homes and apartments for low-income Americans. Groups have branched out beyond housing and are working on economic development, job training, public safety, and health care.

The net result of Enterprise's work with community-based nonprofits is that we have helped make possible more than 61,000 new and rehabilitated units of housing for the poor. The Enterprise Foundation and its subsidiaries have raised approximately $1.8 billion in grants, loans, and equity for nonprofit housing development, leveraging several times that amount in total development costs.

Community-based nonprofits would not be able to do their important work without certain federal programs that fund local initiatives. As you grapple with the tough funding choices that are inevitable for this Subcommittee, priority should be given to flexible programs that help communities solve their own problems.

It is more cost-effective for the federal government to give local governments the tools they need to rebuild neighborhoods than it is for the federal government to pay for the costs of social disintegration. Even in a time of shrinking domestic discretionary spending, it does not make sense to deal with the conditions in low-income neighborhoods solely through spending on prisons and Medicaid. HUD's block grant programs, HOME and CDBG, are an effective and efficient force to keep our cities liveable.

## HOME

One of the most useful tools for nonprofits is the HOME program. It is working well in many different local markets to provide decent, affordable housing for low-income Americans. HOME is in many ways the prototype of all of the buzzwords that currently characterize the debate over housing and community development. It's a partnership. It leverages other resources. It is driven by local decision-making. As your Subcommittee grapples with reinventions and new approaches, it is important to keep in mind that there is an existing program that embodies these principles.

As you know, the HOME Program was created in 1990 as part of the Cranston-Gonzalez National Affordable Housing Act. We greatly appreciate your hard work on this issue as a member of the authorizing committee. HOME was based on the recommendations of the National Housing Task Force, a 26-member, nonpartisan commission that was given a mandate by Congress to reexamine our country's housing policy. The National Housing Task Force was chaired by James Rouse of The Enterprise Foundation and David Maxwell of Fannie Mae.

The Task Force report, *A Decent Place to Live*, warned that worsening conditions in low-income communities called for a new national housing policy. It proposed that Congress create a flexible low-income housing production program that allowed state and local governments to decide how to best meet local housing needs. The report recommended a prominent role for community-based nonprofit housing developers in this new system. The HOME program as finally enacted by Congress reflects these basic principles.

HOME is a partnership among the federal government, state and local governments, and nonprofit housing developers. HOME permits communities to choose which mix of housing activities -- rehabilitation, new construction, or rental assistance -- best meets local needs. It allows local priorities to determine how the federal dollars are spent, thus ensuring a program that varies widely across the country.

This means that a city with a need for affordable apartments can use HOME to rehabilitate apartment buildings. A city with lots of low-income homeowners living in dilapidated properties can use the HOME funds to fix up single family homes. A state with many poor renters and housing that's in good shape can use HOME to acquire existing property to use as low-income housing. A rural area with a shortage of affordable housing can use the program to build new apartments or single family homes.

This is a departure from past programs. HOME is not a categorical program that gives federal grants for one specific type of activity. Instead, state and local governments are required to prepare a Comprehensive Housing Affordability Strategy (which is now part of a broader Consolidated Plan for all of the jurisdiction's HUD formula funding) that assesses local housing needs and outlines the jurisdiction's plans to use HOME for the mix of housing activities that best meets those needs. HOME funds cannot be used for activities that are not a priority.

These projects show HOME working as Congress intended. HOME funds are used to leverage many other sources of funds to make scarce federal dollars go further to serve very poor people. HOME projects vary widely depending on local housing markets, which is exactly as it should be. Local partnerships are formed to meet identified local housing needs. Since its inception, the HOME program has helped produce nearly 180,000 units of housing. **To maintain its excellent record of providing affordable housing to those in need, HOME should be funded at the Administration's requested level of $1.55 billion.**

While The Enterprise Foundation supports the Administration's proposed funding level, we do not support the details of its proposal for a bonus pool that can only be used for homeownership activities. Bonus pools or other incentives can be a useful tool to give local jurisdictions an incentive for better performance, but the HUD proposal appears to be a categorical program grafted onto a block grant. It doesn't make sense that only cities that wish to undertake homeownership activities are eligible for bonus funds. Bonus funds should be available for innovative programs that meet local needs, serve people with very low incomes, or promote regional collaboration. The Enterprise Foundation supports bonus pools tied to performance and judged by peer review, but the funding should be available for any eligible purpose of the HOME program.

We also have reservations about the numerous proposals in the Administration's budget to make small programs into set-asides within the broader block grants. While we support continued funding of many of these programs (lead paint abatement, for example) it does not make sense to use the block grant programs as slush funds to pay for many categorical activities.

## Community Development Block Grant (CDBG)

Like the HOME program, CDBG has been a flexible tool for state and local governments to finance neighborhood revitalization activities including the development of affordable housing, infrastructure and economic development initiatives. Specifically, CDBG can be used to fund a host of community development activities including: rehabilitation of housing, commercial, and industrial buildings; economic development in the form of business loans, business incubators, and entrepreneurial training; site improvements, such as new water and sewer lines, streets and gutters; park improvements; construction of neighborhood service centers and community buildings; and homeownership activities. Nationwide, 77 percent of all CDBG funds are budgeted for physical development. In 1992, housing activities comprised almost 40 percent of all spending. Most housing funds (81 percent) are used for rehabilitation, and support the renovation of an estimated 120,000 homes per year.

Congress requires that jurisdictions spend 70 percent of their CDBG funds to benefit low- and moderate-income people, however, the 70 percent requirement is typically exceeded. In 1990, the average low- and moderate-income benefit across the country was 89 percent. To maximize the low-income investment, state and local governments often provide CDBG funds to community-based nonprofits to assist in their community development activities.

Also similar to the HOME program, CDBG has a tremendous multiplier effect. Use of CDBG funding as seed money leverages many more dollars from private corporations and financial institutions. All of these resources combined have an immense economic impact on low-income neighborhoods. With respect to CDBG spent on average housing activities, each CDBG dollar leverages an additional average of $8.44.

CDBG funds spent on business development and job creation activities largely provide assistance to small and minority businesses. Ninety-nine percent of businesses assisted with CDBG funds in 1993 reported revenues of less than $6 million; more than half of these businesses employed fewer than six people. According to recent data, jobs supported by CDBG funds still exist after four years; 96 percent of jobs were full-time positions; and 90 percent paid more than minimum wage. Neighborhood residents held approximately 32 percent of jobs within CDBG-assisted businesses, and minority-owned businesses seem to be assisted by CDBG funds at about three times the rate anticipated by national share data.

CDBG offers another positive example of how HUD programs can be used to foster productive partnerships between the federal government, state and local governments, private businesses and nonprofits. **To maintain its significant accomplishments, CDBG should be funded at the Administration's requested level of $4.9 billion.** We have the same reservations about the Administration's proposed bonus pool and set-asides for CDBG as we described above about the HOME program.

**Nonprofits affiliated with Enterprise have had much success in using HOME and CDBG to leverage other resources and build homes for low-income people. In Missouri, for example:**

- The Parkview Gardens Association, with technical assistance from The Regional Housing Alliance in St. Louis, recently rehabilitated 64 units of multi-family housing for small to large low-income families. The project was financed with a $977,000 HOME grant, a $310,000 CDBG grant, a $162,000 Federal Home Loan Bank grant, a $670,000 loan from Mark Twain and Boatmen's Bank, and $2.5 million from the St. Louis Equity Fund, Boatmen's Bank and Mark Twain Bank.

- Maplewood Community Betterment, again with technical assistance from The Regional Housing Alliance in St. Louis, is currently rehabilitating 16 units of multi-family housing. The project is financed with a $324,000 HOME grant, a $300,000 CDBG grant, a $164,000 loan from Citizens National Bank and $608,000 from the St. Louis Equity Fund.

## Conclusion

HOME and CDBG are working to improve conditions in our neighborhoods every day. As you deal with the impossible choices that are the lot of the HUD-VA Subcommittee, you should look for programs that are locally driven, flexible, and that promote partnership. HOME and CDBG meet that test and deserve full funding.

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## PREPARED STATEMENT OF RALPH A. BRADSHAW, PH.D., PRESIDENT, THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY

Mr. Chairman and Subcommittee members:

I am Ralph A. Bradshaw, professor in the Department of Biological Chemistry at the University of California, Irvine. I am testifying today as President of the Federation of American Societies for Experimental Biology (FASEB). Our organization is a federation of 10 scientific societies with a combined membership of more than 44,000 scientists. The members of our societies conduct biomedical and life sciences research at universities, government laboratories, and research institutes in the U.S.

We appreciate this opportunity to offer testimony to the Appropriations Subcommittee on VA, HUD, and Independent Agencies.

Of the myriad of programs falling within the charge of this Subcommittee, I want to focus on three and present FASEB's recommendations for funding important life-science research supported through the National Science Foundation (NSF), the Veteran's Administration (VA) and by the National Aeronautics and Space Administration. FASEB's fiscal 1997 funding recommendations were made after examining these agencies at a consensus conference last October. We recommend:

**$341.6 million for the NSF Biological Sciences Directorate (BIO)**
**$297 million for VA Medical and Prosthetic Research**
**$50.1 million for NASA biomedical and life sciences research**

### NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is the sole federal agency with the mission to promote a broad program of basic research and education in science, especially including biology, mathematics, and engineering. Its education mandate covers every stage of academic development from elementary school to postdoctoral training. NSF plays an essential role in providing the scientific knowledge base upon which the technological infrastructure of the nation rests.

NSF's Biological Sciences Directorate (BIO) provides over 40% of all federal support for non-medical basic biological research performed by colleges and universities. In some areas of life science research, such as biodiversity, environmental biology, and plant biology, NSF provides 95%, 75%, and 50%, respectively, of the nation's research support. Budgetary constraints in other federal agencies supporting R&D are likely to make NSF's overall contribution to fundamental research and training in the United States more critical than ever. For these reasons, adequate and stable funding for NSF is essential if we are to sustain the rate of scientific and technological advance that have been the cornerstone of our nation's prosperity. In the life sciences, U.S. leadership in biotechnology has resulted in spectacular health and economic benefits for the nation. The maintenance of our leadership in biotechnology requires a continued investment by the federal government in our scientific knowledge base.

The BIO Directorate has supported fundamental research on microorganisms, plants, and simple animals that has led to important discoveries and unforeseen new technologies. These discoveries and technologies have resulted in major scientific advances and wide applications. BIO-supported research on obscure bacteria led to the discovery of DNA-cutting enzymes called restriction endonucleases. Restriction endonucleases have played an essential role in the development of the entire field of molecular biology and the biotechnology industry that it has spawned.

NSF BIO must continue to be a national funding priority, since it supports most of the basic biological research not clearly coupled to medicine. As FASEB noted in its FY 1996 Consensus Conference Report, ". . . it seems inconceivable that the richest and most technologically advanced nation on earth can support only 2,900 relatively small projects per year in fundamental biological research."

Our recommendation for FY 97 responds to a disturbing trend in which funding of new NSF investigators has declined from 19% in 1994 to 16% in 1995. There was a similar decline in success rates for overall research awards. The goal of the FASEB recommendation is to reverse this trend in order to preserve the integrity of the nation's basic science effort. FASEB recommends that BIO fund 3,000 grants in FY 1997. With an average award of $100,000, this represents a 6% increase over the Administration's FY 1996 request for NSF.

To take adequate advantage of today's exciting opportunities in life sciences and to maintain our international leadership, the average BIO grant should grow over the next five years, reaching 3,300 grants with a $150,000 average per grant by the turn of the century.

For FY 1997, FASEB recommends that the FY 1996 funding levels for education and training be maintained at their FY 1996 levels. FASEB urges a total budget of $341,650,000 for BIO in FY 1997.

While the focus of the FASEB membership is on life sciences, FASEB wishes to emphasize that one of the unique strengths of NSF comes from its broad mission. NSF is better poised than mission-oriented agencies to foster interdisciplinary research among the life, physical, mathematical, and other sciences. This is particularly important because innovative advances often occur at the interfaces between scientific disciplines. Thus, while FASEB's budgetary recommendations for NSF are restricted to the BIO Directorate, FASEB plans to work closely with the American Chemical Society, American Physical Society, and other members of the Coalition for National Science Funding to develop agency-wide recommendations for research funding.

In addition to funding recommendations, there are several areas regarding policy issues where FASEB has developed recommendations. In this testimony I would like to cite three: investigator-initiated proposals, centers, and earmarking.

With respect to investigator-initiated proposals, the National Science Board report on the future of NSF noted that one of the keys to the Foundation's success has been "investigator-initiated proposals and selection of the best of the proposals on the basis of merit." FASEB conferees concur with this view and urge that Congress consider this relationship when contemplating new programs or administrative requirements. The conferees also note that the training of undergraduate and graduate students and postdoctoral researchers is an important component of investigator-initiated research grants. Thus, the nation receives triple benefits from these funds: (1) information, (2) enhanced scientific and technological infrastructure, and (3) training for graduate and postgraduate fellows who become the next generation of scientists.

For these reasons, and to fully take advantage of the multitude of opportunities in life sciences, both the size and number of investigator-initiated awards should increase over the next five years at NSF's BIO-Directorate.

With respect to centers, the BIO Directorate targets funds for the support of three types of centers: Science and Technology Centers (STCs), Centers for Ecological Analysis and Synthesis (CEAS), and Long Term Ecological Research Sites (LTER). The centers provide long-term, stable support for interactive and often interdisciplinary groups of investigators who bring a range of expertise to bear on specialized research problems. Science and technology centers supported by NSF deal with matters ranging from molecular biology to ecology, creating pathogen-resistant plants, and developing new and sophisticated instruments for biological research. Support for the long-term sites has provided valuable data on the long-term effects of the environment and use of habitats in deserts, polar regions, tropical rain forests, and coastal areas. Thus, these programs foster interdisciplinary research in several areas of the life sciences.

To assure continued vitality of these activities, FASEB supports the recommendation by the Senate Appropriations VA-HUD-Independent Agencies Subcommittee for an independent review of NSF management of them, "evaluating performance, discontinuing weak centers and encouraging centers to seek financial independence when appropriate."

For FY 1996, NSF proposed to target 8% of the BIO budget for support of these centers. This level of support is viewed as an appropriate long-term goal by the FASEB conferees.

With respect to earmarking, FASEB commends the House Science Committee for addressing the problem of earmarking. Current budgetary constraints make it imperative that federal R&D funds be used to support the best, merit-reviewed projects. Earmarking decreases the funds available to support these competitive research projects.

Because of the complexity of the earmarking issue, we suggest that a task force of scientists, university administrators, and government representatives be convened to study the implications of the recommended anti-earmarking legislation and to report its findings to Congress.

## VETERANS AFFAIRS MEDICAL RESEARCH

The mission of the VA research and development program is to enhance the quality of health care for U.S. veterans. At present, the research program is designed to integrate clinical needs with fundamental research, and to assure the rapid transfer of new knowledge from the laboratory to the bedside. As a result, veterans benefit from advances in diagnosis and treatment as well as from the talents of the cadre of highly trained physicians who are attracted to the VA system for the opportunity to combine research and clinical care.

The budget for VA research has not kept pace with inflation. This results in missed opportunities to address research issues related to veterans' health, deterioration of the VA research infrastructure, and a growing inability to provide opportunities for research career development. In recent years, there has been a general decrease in the number of programs funded. The number of funded programs in 1994 was below the 1981 level.

The research budget now represents approximately 1.2% of the entire VA medical care appropriation. To reverse this alarming trend and to provide vitally needed resources for the VA research program, FASEB urges that a budget of $297 million be appropriated for the VA Medical and Prosthetic Research Program in FY 1997.

This recommendation includes $20 million currently included in the DOD transfer. Congress should recognize that as veterans age, the VA requires resources for research on treatment of disorders unrelated to active duty military assignments. These initiatives are difficult to plan and develop through a congressionally mandated DOD pass-through mechanism.

### NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NASA funding has been reduced by 30% in recent years. As NASA is downsized and its programs reduced, most of its resources continue to be dedicated to maintaining humans in space, as reflected by the Human Space Flight Account ($5.5 billion in FY 1995) combined with the share of other NASA accounts dedicated to supporting manned space missions. The Space Station continues to receive strong support from the Administration and Congress. Both the House and Senate appropriations committees recommended full funding of the Administration's request for the Space Station in FY 1996. The House also authorized Space Station funding at $2.1 billion for seven years. The Senate, for the sixth straight year, defeated a proposal to eliminate the Space Station appropriation.

NASA's continuing commitment to the Space Station and the Space Shuttle implies a corresponding need for physiological and other biomedical research. NASA supporters emphasize the importance of the agency's life science research, not only for mission support, but for earthside applications as well. Given NASA's commitment to, and the Congress' support for, manned space exploration, reduction of funds for competitive, merit-reviewed biomedical research to $50.1 million in FY 1996, less than 0.3% of the agency budget, is counterproductive.

At minimum, FASEB recommends maintenance of the Life Sciences Research and Analysis budget at a consistent level in FY 1997, $50.1 million.

The National Aeronautics and Space Administration (NASA) is the only Federal Agency that can explore the role of gravity in living systems. Although hypergravity can be studied on Earth's surface with centrifuges, only by escaping Earth's gravitational force can the influence of gravity on morphology, function, reproduction, and development be determined. Ongoing NASA life science projects include the Life and Microgravity Spacelab Mission (LMS), the U.S. Microgravity Payload Mission (USMP-3), the Neurolab Mission, and a series of missions during which the American Space Shuttle will dock with the Russian Space Station. In recent years, NASA has strengthened the quality of its external merit review of research proposals, has developed strong collaborative research efforts with many individual Institutes within NIH, and has increased its role in educating American students in biomedical issues and challenges surrounding life in space.

Life science research at NASA is administered by the Office of Life and Microgravity Sciences and Applications (OLMSA). The office uses microgravity to understand how gravity affects living systems and to conduct research in the areas of fluid physics, materials science, and biotechnology. Life Sciences research is undertaken primarily by the Office's Life and Biomedical Sciences and Applications Division (LBSAD), with a budget in FY 1995 of approximately $150 million. About one-third of this budget is allocated to the Research and Analysis (R&A) account that sponsors fundamental and applied intramural and extramural research projects. In FY 1995, the R&A budget was $50.1 million. The remainder of the Division's budget funds are expended for engineering and development of life science equipment for space flight, including scientific instruments that will be used to conduct research on the Space Station.

Mr. Chairman, that concludes my testimony. Again, FASEB thanks the subcommittee for this opportunity to offer its views on fiscal 1997 funding matters.

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## PREPARED STATEMENT OF DAVID JOHNSON, PH.D., EXECUTIVE DIRECTOR, FEDERATION OF BEHAVIORAL, PSYCHOLOGICAL AND COGNITIVE SCIENCES

Mr. Chairman, members of the Subcommittee, thank you for the opportunity to express written views on the President's FY97 appropriation request for the National Science Foundation. The Federation of Behavioral, Psychological and Cognitive Sciences is a coalition of 17 scientific societies and some 150 graduate departments of psychology, education, and cognitive science. The Federation represents approximately 25,000 behavioral scientists. Federal support for research is indispensable for our scientists. It enables their research. Federal support is also one of the pillars of higher education. It helps make possible the transmission of knowledge to the students we expect to replenish the nation's skilled labor pool. The National Science Foundation is a primary means by which government supports basic research and education in science. It also accounts for a large percentage--in some cases the majority--of support available for basic research in the behavioral and social sciences.

The President and the Congress have each made a commitment to balancing the Federal budget within a set time period. While the deficit has been decreasing in recent years, the level of savings yet to be achieved to meet the goal of reaching balance is still very large. There is a temptation in the face of this difficult task to cut everything so that the damage to any given area of government service to citizens may be minimized. Under such a strategy, research is of no greater or lesser priority than, say, a public works project. While the temptation to make cuts in this way may be present, the argument has also been made that all areas of Federal spending are not alike. Specifically, it has been argued that some expenditures produce more than they consume. They help create the nation's wealth and, thus, contribute not only to the prosperity of citizens but also to the tax base. It is proper to consider these expenditures to be investments. In our view, science and education are such investments. Studies of relative earning power of those who are well educated versus those who are less well educated show a strong positive relation between education and income. Likewise, econometric studies of the return on investment in research show that the investment is richly rewarded--outperforming the best publicly traded stocks. Those studies also show that much of the growth in our economy has been technology dependent. Thus the technological developments that are the ultimate products of basic science are also the lifeblood of our economy. They enable our companies to prosper. They provide many of the jobs that employ the nation's citizens. And these technologically-based corporations with their technologically-based jobs generate a significant portion of the taxes that make it possible for the federal government to provide services. U.S. Corporations, however, have not viewed it as their role to support basic research. Their research investments tend to be placed farther along the development continuum. Federal support of basic research, thus, is indispensable to assuring the economic health of the country.

In tight financial times, it makes sense to reduce expenditures on unproductive areas. It makes no sense to reduce investments that reduce indebtedness by generating resources. It is in that context that we ask you to view the National Science Foundation budget request for fiscal year 1997.

The National Science Foundation was created out of the experience of World War II. Knowledge from basic science played a significant role in winning that war. The lesson learned was that basic research yields building blocks that can be applied in many ways. There was a desire at the end of World War II to harness the power of basic research for civilian uses. The National Science Foundation was created to transfer the creative power of basic research to such uses. And it has been spectacularly successful at fulfilling that mission. Over the past forty-five years, National Science Foundation support has been behind many of the basic discoveries that have made possible the technologically sophisticated world we live in today. Just five years ago few of us knew what the Internet was, but NSF was in the process of building it nevertheless. Now millions of people and thousands of businesses around the world depend on it for communication and information gathering. Our past experience with the return on basic research is our surest indication that continued strong support of NSF will enable a prosperous future for this country.

In fact NSF has done much more than provide the basic building blocks for products and services. NSF support sustained over 45 years has actually helped alter the pace of scientific discovery. As NSF Director Neal Lane has observed, we are living in a golden age of science. In the past, there were occasional monumental discoveries that caused radical changes in thinking. There were decades and even centuries between these leaps in understanding. Today major leaps in knowledge occur with regularity because the United States government has chosen over many years to invest in science. One can compare the economic position of the U.S. with any of its rivals in the world marketplace to see that the decision to invest in these building blocks of the economy was the right decision: Since January of 1993, this country has produced 8.4 million new jobs. The next best performance was turned in by Canada with 700,000 new jobs in the same time period, while Germany and Italy experienced negative job growth. Our job growth far exceeds that of all the other G-7 nations combined! From 1993 to 1995, our average growth in Gross Domestic Product was about 3.5%--slightly ahead of Canada with about 3.2% growth and far ahead of Japan, Germany, France, and Italy. We think of Japan as the country that guarantees its workers jobs for life, but today our unemployment rate of 5.5% is second lowest among the G-7 nations. Only Germany has a lower rate. We were right to invest in research. It is just as right today even with the attention now being paid to downsizing the government. Certain functions of government are vital and must be preserved. This is one of them.

One disadvantage NSF has in presenting its budget request to Congress is that NSF funds beginnings and not ends. In this era of downsizing there is real pressure to demonstrate productivity to justify existence. Saying it funds more than 20,000 research projects each year is unlikely to impress you, its appropriators, as a particularly meaningful measure of NSF's productivity. You want to know what came of that research, what inventions flowed from it, what processes were improved or created as the result of the research. And of course, there is no immediate invention from most basic research. NSF can't justify its existence on the basis of what it is producing now or even on the basis of what it produced last year. This is not a reason for NSF to be embarrassed or to have its budget request greeted with skepticism. It is a reason to use the right measures of NSF's productivity in determining what level of funding is justified for it. NSF's value can be fairly judged only by looking at what it has done over time--a long time by today's standards: twenty or thirty years. If you will take that perspective, then the value of NSF will begin to emerge clearly for you.

Take an area dear to the hearts of scientists represented by the Federation: the brain. Twenty five years ago surprisingly little was known about its precise workings or about how the environments in which we live and function influence brain development. Today large sections of the human brain have been mapped. Many of the proteins that enable the brain to function have been discovered and their uses determined. Sophisticated models for how learning and memory occur have been constructed. Not only have those models advanced understanding of how the brain works, but those same models have shown the way toward improvements in human creations such as computers, communications and sensing devices, robotics, and software. NSF has been a steady supporter of neuroscience, cognitive, and computer engineering research. The result of that support is that now knowledge from these fields is beginning to coalesce bringing advances across an array of areas from health, to education, to computer and software design to special-purpose electronic circuitry, to communication. And NSF is considering an initiative called the Learning and Intelligent Systems Initiative to promote the further coalescing of knowledge from these rapidly developing fields. When NSF began to support these areas decades ago no one could predict what would come of it. That is the nature of basic science support. No one knows what will come of it when the support starts, but years later the array of applications is gratifying, and the sciences themselves evolve to new levels of capability poising them to make even greater contributions. That kind of record can be shown again and again at NSF.

One thing that has enabled NSF to perform so well year after year is the fact that it has largely steered clear of the changing tides of politics. NSF has sought to focus its attention on one simple thing: identifying and supporting the best science. Republican and Democratic administrations have respected NSF's single-minded dedication to science, and Congress has also been relatively restrained in imposing politically-driven changes of course on NSF. The non-partisan approach to NSF is what has allowed the Foundation to be consistently among the government's best functioning and most productive agencies. 4% of NSF's budget goes to administration. The rest goes to research and science education. The agency does what it is supposed to do and does it very well. This Congress should honor the tradition of non-partisan support of NSF by continuing to give it the strong and unfettered support it has received from past Congresses and past administrations.

For fiscal 1997, NSF is requesting a budget of $3.325 billion. That request includes elimination of the Academic Research Infrastructure Program which had been funded at $100 million. The backlog of deferred maintenance and deferred building of scientific facilities is estimated to be over $11 billion. NSF makes no dent in a problem of that magnitude with an expenditure of $100 million. We respect its decision not to use funds in a way that cannot accomplish their intended end. The request for research and related activities is $2.472 billion while the request for education and human resources is $619 million. The societies of the Federation support the request for education and human resources. We also believe, however, that the elimination of the Academic Research Infrastructure Program provides an opportunity to put a bit more money into research. It is our view that Congress should fund research and related activities at $2.522 billion, an increase of $50 million over the request. As we have argued, investments in research return many times the initial expenditure both to the economy and to the tax base of the country. In difficult financial times it is worthwhile to put resources into areas that have the potential to provide enduring returns. Science and education are two such areas. They deserve your strongest support. We thank you for this opportunity to express our views on the NSF budget request.

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## PREPARED STATEMENT OF SENIOR CHIEF CHARLES L. CALKINS, USN (RET.), NATIONAL EXECUTIVE SECRETARY, FLEET RESERVE ASSOCIATION

Mr. Chairman and other distinguished Members of the Subcommittee. I am Senior Chief Charles L. Calkins, U.S. Navy Retired, National Executive Secretary, Fleet Reserve Association (FRA). The Association was chartered in 1924 and has a world-wide membership of 160,000 Sailors, Marines, and Coast Guard personnel on active duty, retired, or in the reserve – veterans all. It is my privilege to bring their message to you concerning the FY 1997 Department of Veterans Affairs (DVA) budget request.

The DVA budget request of $39.239 billion for FY 1997 boasts a $1.006 billion increase over the FY 1996 Congressional Conference Report estimate of $38.333 billion. Concurrently, Congressional Quarterly's Washington Alert offers a reading of only a $771 million increase above an estimate of $38.607 billion for FY 1996.

Of course, FRA supports the DVA figures, an increase of $1 billion, but cannot state unequivocally that it is adequate or sufficient to serve the Nation's veterans. FRA does agree that additional funding must be considered for VA medical programs, cost-of-living adjustments for service-connected disability ratings, enhanced educational opportunities, expansion of the National Cemetery System, and certain construction programs.

### Medical Care

The DVA budget request for Medical Care is $17 billion, an increase of $448 million over the FY 1996 estimate. The FRA recommends that Congress add an additional appropriation, determined by this distinguished Subcommittee, to expand access to VA medical facilities to military retired veterans.

In my recent statement to the Committees on Veterans Affairs, I recommended that VA medical facilities, particularly at or near military installations being closed or "downsized," be opened to military retired veterans on a priority immediately below that of service-connected disabled veterans. Access to the facilities would be at the option of the military retired veteran, if space is available.

The Association believes that every veteran should have access to VA facilities; however, FRA is acutely aware that the system is unable to physically or fiscally accommodate all veterans. This request advocates an open door policy for military retired veterans who were promised "free medical care for life" if serving 20 or more years in the uniformed services. Today, that promise grows more shallow with each passing year.

It is a sad commentary to know that some military retired veterans are being shut out of Military Treatment Facilities (MTFs), especially those who are 65 years of age or older. An estimated 35 percent are combat veterans of one or more wars. Less than that number have combat-related disabilities but they honored their commitment to the Nation and are seeking only that which was promised to them. Currently, this age group, unlike other federal employees, is thrown to the civilian sector for care under Medicare. Many of them, residing near military installations and counting on "free care" from MTFs, failed to enroll in Medicare Part B. The only recourse for some may be accessing VA medical facilities.

Hopefully, this distinguished Subcommittee will agree and provide the additional funds to accommodate the Nation's military retired veterans.

### Selected Construction Projects

FRA has no objection to the construction projects listed in the DVA budget request for FY 1997. It does recommend that priority funding be given to the construction and improvement of nursing homes. The Association visions a greater need for these facilities in the future. World War II and Korean veterans are growing older, more of them will suffer from mental illnesses, some brought on by experiences relived many times over the years. For their families to place them in commercial nursing homes drains what little financial resources they may possess. Expanding the number of VA nursing homes and beds will provide a beneficial service, not only in providing accommodations and care but offering an atmosphere of camaraderie with other veterans.

The Association also agrees with DVA that planned construction of VA hospitals at Travis AFB, California and Brevard County, Florida should go forward. Both areas have large concentrations of veterans requiring health care.

### Cost-of-Living Adjustments

There is little more to say other than to support COLAs for service-connected disability and Dependency and Indemnity Compensation (DIC) ratings. For the latter, FRA has appealed to the Committees on Veterans Affairs to correct an inequity enacted in OBRA 1990, the termination of DIC reinstatement rights for widows losing their survivor payments due to remarriage. If such rights are restored, and they should be, the Association requests funds to reactivate payments to widows whose remarriage ends in divorce or demise of their subsequent spouses.

### National Cemetery System

FRA supports the request for $76.9 million for the National Cemetery System (NCS). NCS was established by Congress in 1973, an act fully supported by the Fleet Reserve Association. Its cemeteries are probably visited by more people than any other VA facility. The need to maintain the cemeteries in an attractive, peaceful environment is highly desirable. The clamor from the public when the cemeteries aesthetics are disturbed demands the immediate attention of NCS. Since the cemeteries are subjected to the elements, many require more than normal maintenance. This, of course, sets up a cry for more funds.

FRA supports additional funding for NCS, if required, and with the understanding that such funds are to be "fenced" to prevent use for other purposes. Our veteran population grows older each year. NCS anticipates increased interments for the next decade or so. Under this scenario, NCS must be prepared to accommodate an additional workload even to the extent of hiring more full-time employees. (FTEs).

The Association continues to be an advocate for the NCS State Grant program. Financial grants to State veterans cemeteries relieves the Federal Government of having full responsibility for funding additional cemeteries at the national level. Any encouragement for more States to construct their own cemeteries can be a most economical move on the part of Congress, DVA, and veterans organizations.

### All-Volunteer Force Educational Assistance Program

The Association has urged the Committees on Veterans Affairs to consider enhancement of the Montgomery G.I. Bill (MGIB). Currently, cash benefits derived from the program assist the participant in covering only 25-to-37 percent of the annual costs of undergraduate education. FRA also recommended that MGIB benefits be extended for a period of 48 months in lieu of 36. The Association understands that any enhancement will increase costs to participants as well as additional congressional appropriations. However, FRA is aware that investment opportunities offered recently-discharged veterans will reap higher revenues for the Nation in later years.

### Grateful Acknowledgement

Mr. Chairman. FRA has touched upon the veterans programs of major interest to its membership. However, it supports – and will continue to do so – any enhancement to programs that show appreciation to our veterans who have served the Nation above and beyond that of our normal citizens. The United States exists only because its veterans have kept any enemy from our shores, taking the fight to the enemy rather than to have U.S. citizens suffer the horrors of war. Whatever this distinguished subcommittee can do for our veterans is sincerely appreciated by this Association.

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## PREPARED STATEMENT OF THE FOND DU LAC BAND OF LAKE SUPERIOR CHIPPEWA

Mr. Chairman, Members, the Fond du Lac Band of Lake Superior Chippewa would like to thank you for the opportunity to present this testimony on FY-1997 appropriations for the VA, HUD, and Independent Agencies. We seek your support for our Environmental Program and our cooperative environmental research initiatives, which are essential to protect the environmental quality and the natural resources on which our people depend, and are also vitally important to the other citizens in our region.

The Fond du Lac Reservation is one of six Chippewa Bands in the State of Minnesota. The Reservation was established by the Treaty of 1854 with the United States Government. Currently, there are about 3,350 Fond du Lac Band Members. The Fond du Lac Reservation encompasses approximately 100,000 acres, and is located 20 miles west of Duluth, Minnesota and the western end of Lake Superior.

**The continuation of support for the Indian Housing Program is very important to the Fond du Lac Band. These funds from HUD are essential to build affordable housing for our Band Members. We urgently request that the Indian Housing Program budget be increased to**

**address the need for additional housing or at a minimum to maintain the current funding levels as a separate line item in the budget.**

**FY-97 Fond du Lac Indian Reservation Housing Authority**

The need for safe, sanitary, and affordable homes in Indian Country is not being met by private enterprise.

On April 23, 1996, four of our low rental housing units were unfortunately burned to the ground. Four families were homeless because we have no alternative housing for them. These four families are still without housing. We have called the public housing authorities in Duluth, Minnesota, and Superior, Wisconsin, but there is no low rent housing available to our people. The Native American people suffer greatly from discrimination. Even with our Tribal Government stating that they would pick up the cost of the huge deposit and first month's rent, the families were still told, "sorry, we do not have any vacancies." We know for a fact that in most cases this was not true. This is the reality for Native American people. This is what we have to deal with time and time again.

We are urgently requesting that our funding level be increased to help us provide homes to decrease this unmet need. At the very least our funding level should stay the same, so that we can provide some of the needed housing to our Band Members. This would be of great benefit to our people. To cut or disallow our Operating Subsidies, our "Comp Grant", and Housing Development moneys would have a disastrous impact on all Indian Housing. We do not want to go back to the living conditions of fifteen or twenty years ago.

Our need can be justified through our waiting lists for housing, and the lack of available housing. There are many Indian people that have come back to the Reservation, or want to return. There is a need for housing our people. We, at Fond du Lac, are establishing a community that is a safe harbor for our people. To hold back funds for Indian Housing now, could set the Indian people back thirty years. There is still discrimination towards people of color, which means that we cannot just go anywhere and rent or buy housing. The Indian Housing Development Program has allowed us to build affordable housing which meets the needs of American Indian families on our Reservation.

**FY-97 U.S. Environmental Protection Agency**

We are requesting a total of $275,000 in FY-1997 to continue the funding of the **Sediment Contaminant Mitigation and Prevention for Mercury and PCB** project, the **Control of Harmful Exotic Fish through Spawning Pheromone Attractants**, and the **Control of the Transport and Spread of Harmful Exotic Fish Using Sound as a Repellent** research projects, through the U.S. Environmental Protection Agency.

The **Sediment Contaminant Mitigation and Prevention for Mercury and PCB** project is a cooperative study between the University of Minnesota/Duluth and the Fond du Lac Natural Resources Program, to test various methods of preventing mercury and PCB contamination in aquatic sediments from getting into the food chain. Mitigation strategies will be tested on a small scale, but methods used must be cost effective and practical enough to be used full scale on lakes, rivers, reservoirs, and watersheds. The most effective and economical method will be tried on a large scale. The mitigation techniques developed will be transferable to other locations in the Great Lakes Region as well as other locations with the same problem. Congress provided $100,000 for the first phase of this study in 1996. We would like to thank the Committee for its support of this important project. We are requesting **$160,000** to continue this study in 1997. These additional funds are critical for the full implementation and continuation of the project in 1997.

The problem of biotic uptake of mercury and PCB, resulting in fish contamination in our lakes and rivers, and in Lake Superior, has the potential to devastate the sport fishing industry and subsistence use of the fishery. Mercury levels in fish in our region have been shown, by the Minnesota Pollution Control Agency, to be increasing at a rate of 3% to 5% per year since 1970. The attached graph, *Projection of Mercury Concentration in Fish Based on a 5% per Year Rate of Increase*, shows the projection of mercury levels into the future, using benchmark data on 65 lakes in northeastern Minnesota. The mercury levels in the fish from many of our lakes will be above safe consumption levels, within two decades. This will result in fish which are not fit for human consumption. PCB levels are also a problem, especially in contaminated sediments, sometimes in association with mercury. An effective, environmentally benign, and efficient methods to use "environmental engineering" to prevent mercury from contaminating the aquatic food chain must be found. The federal funding of this research will prevent the decline of this important recreational and subsistence fishery and will derive benefits worth many times the initial investment

Another critical problem facing the Great Lakes is the control of harmful exotic fish, specifically the Eurasian ruffe. The ruffe was inadvertently introduced into the St. Louis River harbor on Lake Superior by international shipping, and is currently expanding its range along the south shore of Lake Superior. This harmful exotic has the potential to greatly disrupt our native fish communities throughout the Great Lakes and also in many watersheds adjacent to the Great Lakes in North America. This would include the Mississippi River and Missouri River systems. The use of spawning pheromones is a very promising technology, to provide an effective and efficient tool for controlling these harmful exotic species.

A current ongoing study, the **Control of Harmful Exotic Fish through Spawning Pheromone Attractants** is a research project to study the olfactory response to various compounds and potential pheromones of the Eurasian ruffe (*Gymnocephalus cernuus*) and a field testing study to investigate the potential for using the spawning pheromones to control this harmful exotic species. Fish spawning pheromones are commonly the steroid hormones or their metabolites which are detected in very low concentrations by the extremely sensitive olfactory reception of fish.

A new study, the **Control of the Transport and Spread of Harmful Exotic Fish Using Sound as a Repellent**, will focus on the use of sound at certain frequencies to prevent the: 1) transport of ruffe in ballast water discharge within the Great Lakes, and 2) movement of ruffe into the Mississippi River and other river systems. This technology could also be used to repel ruffe from areas where vessels take on ballast water, and near the Illinois River Canal locks, which connects Lake Michigan with the Mississippi River system. We are requesting **$115,000** to continue these latter two projects in 1997. These research projects are necessary to investigate promising and environmentally benign technologies to control populations of this harmful exotic species which is expanding its range in North America, and to prevent the transport and movement to other areas in the Great Lakes and the Mississippi River system.

## FY-97 INDIAN ENVIRONMENTAL GENERAL ASSISTANCE PROGRAM

Authorization was granted to the Environmental Protection Agency to implement multi-media environmental protection programs within Indian Country through the General Assistance Program (PL 102-497, signed 10/92). However, implementation has been slow and cumbersome due to lack of funding and the lack of a nationally organized approach by the Agency.

However, within Region 5, the 32 Tribes have worked on a government-to-government basis with the Region 5 Administrator, to achieve Tribal environmental protection presence on each and every Reservation. The General Assistance Program has provided these Tribes the necessary resources to develop cooperative relationships with the Environmental Protection Agency, other federal agencies, as well as state and local agencies.

The Indian Environmental General Assistance Program authorizes individual Tribal programs in the sum of $75,000. However, necessary funds to fully implement this crucial program has not been authorized by Congress. Therefore, Tribes are aggressively attempting to protect their Tribal Homelands, with inadequate fiscal and technical support. The Tribes of Region V are eager to continue to work cooperatively with their neighbors and federal agencies in efforts to protect the common environments, but are in need of sustained assistance from Congress and a more productive role by the United States Environmental Protection Agency in fulfilling the Federal Government's Trust Responsibility.

Congress is respectively requested to **remove the appropriation language setting a ceiling on the Indian Environmental General Assistance Program.** Furthermore, a separate appropriation to fully and successfully implement the Indian Environmental General Assistance Program within the 32 Tribes of Region V-USEPA of **$2.4 million is urgently requested.**

## IMPLEMENTATION OF THE USEPA 1990 INDIAN RESOURCE TASK FORCE REPORT

A 1990 Indian Resource Task Force Report (Task Force Report), developed by a blue ribbon USEPA Task Force, identified an immediate $38 million funding level need to begin implementation of basic environmental protection programs within Indian Country. To this date, USEPA has not submitted this Task Force Report to Congress in any attempt to secure these badly needed dollars to assist Tribes in protecting their Tribal Homelands. Though the Task Force is nearly five (5) years old, many of the major components continue to exist as environmental protection concerns for Tribal Governments. Due to these identified urgencies and the lack of real world implementation by USEPA, it is recommended that Congress immediately appropriate the level of funding identified in the 1990 EPA Indian Resource Task Force Report in Fiscal Year 1996 dollars, which is estimated to be $47.8 million.

Inclusive of the immediate appropriation of $47.8 million, it is further recommended that Congress instruct the USEPA to work directly with Tribal Governments to properly update the 1990 EPA Indian Resource Task Force Report to address new Tribal environmental protection program needs, long term Tribal environmental infrastructure development and identified environmental risk factors, affecting Tribal populations and lands, found in the EPA Wisconsin Tribal Risk Study Report. This revised/updated Report should be received by Congress in time for the deliberation of the Fiscal Year 1997 budget.

## FY-97 NATIVE AMERICAN YOUTH ENVIRONMENTAL EDUCATION PRACTICUM

The Fond du Lac Reservation supports the request for funds by the Great Lakes Region of the **Native American Fish and Wildlife Society** (Society) for the **Native American Youth Environmental Education Practicum**. This environmental education practicum would be held at the Fond du Lac Tribal and Community College (FDLTCC), during the summer of 1997. Twenty to twenty five American Indian juniors and seniors from the Great Lakes Region would attend classes at the FDLTCC and would also observe and participate in environmental activities on Reservations within the Great Lakes Region. The FDLTCC is a joint Tribal and State college, located in Cloquet, Minnesota. Approximately 1/4 of the students are American Indians. The students will observe environmental research at area universities and research labs. Natural resource studies and management projects will be observed at Reservations in the region. They will discuss important environmental issues, and to listen to Tribal elders impart the importance of an awareness of, and respect for, the natural world. The Society believes that a reawakening of the traditional values of Indian-to-environment relationships must be renewed within the context of technical professional management and decision making processes of Tribal governments. To make effective and sound environmental decisions, tribal governments need to establish an adequate infrastructure to deal with environmental issues from a technical, cultural, and political aspect. Indian youths must carry this process forward, learning traditions from Tribal elders, ancestral relationship of Tribes to the environment, as well as current technical environmental approaches to solve problems. This summer environmental education practicum in 1997 would be funded for $50,000. We believe that this money would be well spent, when considering the future potential of young students when they are provided with a wealth of knowledge and the opportunity to use it.

We would also like to see funding for EPA Region V Great Lakes National Program Office (GLNPO) increased substantially to provide the funds to conduct essential research, and to ensure

Tribal involvement and participation. Present levels are grossly inadequate given the tremendous value of the Great Lakes ecosystem.

This written testimony is respectfully presented to the House Appropriations Committee, Subcommittee on Appropriations for VA, HUD, and Independent Agencies by Robert B. Peacock, Chairman of the Fond du Lac Band Lake Superior Chippewa.

### Introduction

The Fond du Lac Band of Lake Superior Chippewa is one of six Bands in the Minnesota Chippewa Tribe. The Fond du Lac Reservation was established by a Treaty with the United States Government on September 30, 1854 (Stat. 1109). The Fond du Lac Reservation encompasses approximately 100,000 acres, and is located 20 miles west of Duluth, Minnesota and the western end of Lake Superior.

**The continuation of support for the Indian Housing Program is very important to the Fond du Lac Band. These funds from HUD are essential to build affordable housing for our Band Members. We urgently request that the Indian Housing Program be increased to address the need for additional housing or at a minimum to maintain the current funding levels as a separate line item in the budget.**

We are urgently requesting that our funding level be increased to help us provide homes to decrease this unmet need. At the very least our funding level should stay the same, so that we can provide some of the needed housing to our Band Members. This would be of great benefit to our people. To cut or disallow our Operating Subsidies, our "Comp Grant", and Housing Development moneys would have a disastrous impact on all Indian Housing. We do not want to go back to the living conditions of fifteen or twenty years ago.

The Fond du Lac Natural Resources Program has conducted extensive studies on the mercury levels of the fish from the St. Louis River watershed, in order to have more thorough information on the levels of mercury in the fish. A Subsistence Fishermen/Mercury Contamination Study has also been conducted on fishermen from Fond du Lac, by the Agency For Toxic Substance And Disease Registry (ATSDR). Considering the increasing levels of mercury in fish by **3% to 5% per year**, for this region; we feel that it is imperative to discover a means to break the link in the food chain to prevent mercury from contaminating fish to this degree. Efforts to decrease mercury from entering the environment from power generation, industry, and consumer products must continue; however, it will be years or decades before this will significantly reduce these sources of contamination. The research project, Sediment Contaminant Mitigation and Prevention for Mercury and PCB will determine the best means to break the link in the aquatic ecosystem, by binding, covering, or removing the mercury and sediments from the sediments. Our cooperative research project between the Fond du Lac Natural Resource Program and the Univ. of Minn./Duluth research laboratory have the expertise in conducting the field work and laboratory analysis to carry out this research project. This project would require **$160,000** for FY-1997.

The problem of harmful exotic fish species must be addressed, as the damage that these species do to the native fish community and aquatic system can be extraordinary. The project, Control of Harmful Exotic Fish through Spawning Pheromone Attractants, will determine effective methods to use spawning pheromones to attract the ruffe in order to develop capture methods for controlling these fish. The ruffe was introduced to the St. Louis River harbor, on Lake Superior, and is expanding its range along the south shore, and currently into Lake Huron. The potential cost of impacts from a fully developed ruffe population in North America to commercial, sport, and subsistence fisheries could be hundreds of millions of dollars annually. The problem of limiting further transport and spread of this harmful species will be addressed by a new cooperative study, the Control of the Transport and Spread of Harmful Exotic Fish Using Sound as a Repellent. These two studies would require **$115,000** for FY-97, for the second year of this three year study. The Fond du Lac Natural Resources Program will cooperate with the Univ. of Minn./St. Paul, the USFWS, the National Biological Survey, the Natural Resources Research Insititute, the 1854 Authority, and the Fond du Lac Ceded Territory Fisheries Program.

### FY-1997 APPROPRIATION REQUEST

The Fond du Lac Band of Lake Superior Chippewa is requesting a total appropriation of **$275,000** for FY-1997 for both of the Sediment Contaminant Mitigation and Prevention for Mercury and PCB, the Control of Harmful Exotic Fish through Spawning Pheromone Attractants, and the Control of the Transport and Spread of Harmful Exotic Fish Using Sound as a Repellent.

## ATTACHMENTS

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## Fond du Lac Reservation - Natural Resources Program

## HARMFUL EXOTIC SPECIES RESEARCH AND MANAGEMENT PROJECT

### 1. Control of Harmful Exotic Fish through Natural Spawning Pheromone Attractants

A cooperative project between the Dept. of Fisheries and Wildlife, University of Minnesota/St. Paul Campus, the Fond du Lac Natural Resources Program and Ceded Territory Fisheries Program, the National Biological Service, the U.S. Fish and Wildlife Service- Ashland Fisheries Resources Office, the 1854 Authority, and the Natural Resources Research Institute [NRRI]-Univ. of Minn./Duluth.

**Problem:**

The aquatic resources of the St. Louis River estuary, Lake Superior, the other Great Lakes, and in fact North American fisheries are in jeopardy from harmful exotic species. The Eurasian ruffe (*Gymnocephalus cernuus*) was inadvertently introduced to the St. Louis River harbor from ballast water of international shipping traffic. The ruffe has shown the potential to displace valuable forage and game fish species, such as the yellow perch, and is currently expanding its range into other Lake Superior watersheds. Control measures must be found before this fish disrupts fisheries populations throughout much of North America. The potential cost to sport and commercial fisheries in the Great Lakes has been estimated to be $120 million annually. The cost of ruffe populations established throughout its possible range in North America would be many more times this figure. The impact to the subsistence fishery of American Indians would also be substantial.

Aquatic resource managers have few options for controlling exotic nuisance species, and most involve releasing pesticides into the environment. No successful control programs have devised or implemented for ruffe. New options must be developed through research before Integrated Pest Management (IPM) can be applied to these pests.

**Goals and Objectives:**
Conduct laboratory studies of Eurasian ruffe reproductive physiology, pheromone response, and fertilization of spawn, and carry out field trials and studies to develop practical and efficient measures to control ruffe populations.

1. Collect ruffe from the St. Louis River estuary for laboratory analysis (95-97).
2. Conduct laboratory experiments to isolate the appropriate spawning pheromones to attract ruffe (95-97)
3. Test the olfactory response of the ruffe to various compounds and natural spawning pheromones (95-97)
4. Determine the time to ovulation after ruffe are injected with Lutenizing Hormone Releasing Hormone [LHRH].
5. Use LHRH injected ruffe in field conditions to attract and effectively capture ruffe (96-98).
6. Support basic research on ruffe reproductive physiology and on chemo-attractants of ruffe sperm (96-98)

**Project Description:**
The control of ruffe by using species-specific spawning pheromones to efficiently capture these fish during spawning or to disrupt spawning, is being investigated at the University of Minnesota, Dept. of Fisheries & Wildlife laboratory. Ruffe will continue to be captured by the National Biological Service [NBS] staff from the St. Louis River for use by researchers at the U of M/St. Paul and NRRI. The basic research to study the olfactory response of ruffe to various compounds is being conducted at the Univ. of Minn./St. Paul laboratory, by Peter Sorensen, Ph.D. and his Graduate Student, Peter Maniak.

Additional field tests to test the hypothesis of pheromone attraction will be conducted on the lower St. Louis River, by the Fond du Lac Nat. Res. Prog. (FDL-NRP) and Ceded Terr. Fish. Prog., the USFWS, the NBS, and the 1854 Authority. The use of LHRH-injected female ruffe in baited traps will be field tested more fully in 1997 or 1998, after the ovulation time after injection is established in laboratory studies. LHRH accelerates ovulation during spawning and can be used to cause ovulation to occur at a specific time after injection. The LHRH will induce increased emission of spawning pheromones which can attract male fish to the ovulating females. The use of this technology could be useful develop control measures to attract and capture this harmful exotic fish for population control.

Research into basic reproductive physiology of the ruffe is needed to understand the specific hormonal compounds involved in reproduction, the pheromones related to spawning, and the biochemicals involved in attracting the sperm to the eggs during spawning. This project will also support some of the laboratory research of Pat Schoff, Ph.D. at NRRI in his investigation of the specific chemo-attractants of ruffe sperm to the egg. This research could yield essential answers to the isolation of specific pheromones and to developing effective control measures.

**Project Benefits:** The effective control of ruffe through the use of pheromones or specific sperm attractants would supplement other control measures and would prevent further expansion of this very harmful exotic. The control measures developed using this technology would be environmentally safe and more cost effective remediation of the impacted fisheries and aquatic resources in much of North America. This technology could significantly decrease the estimated millions in dollars of impacts to the commercial and sport fisheries of the nation.

**Project Cost:**
FY-1995: Fond du Lac received $70,000 of Congressional add-on funds, which were administered through the USEPA-Reg. V Great Lakes National Program Office. These funds were then awarded to Fond du Lac for transfer to the Univ. of Minn./St. Paul researchers [$30,000], and the remainder was divided between the FDL Nat. Res. Prog. and the Nat. Biol. Service/Ashland for field testing.
FY-1996: Fond du Lac requested $80,000 to continue research, however, no add-on funds were appropriated. Some of the basic laboratory research and field work was continued with partial funds from the USEPA-Great Lakes National Program Office, the Minnesota Sea Grant, 1854 Authority; and with matching in-kind support from the Fond du Lac Reservation and the NBS.
FY-1997: $60,000 is needed to continue laboratory research into basic reproductive physiology, pheromones, and fertilization attractants. Field studies to investigate pheromone attraction will also be conducted after the supporting laboratory research on induced pheromone emission is conducted.

# HARMFUL EXOTIC SPECIES RESEARCH AND MANAGEMENT PROJECT

## II. Control of the Transport and Spread of Harmful Exotic Fish Using Sound as a Repellent

A cooperative project between the Fond du Lac Natural Resources Program, Loyala University of Chicago, University of Minnesota/St. Paul, Oregon State University, and the National Biological Service.

### Problem:

The Eurasian ruffe [*Gymnocephalus cernuus*] was transported to North America in the ballast of transoceanic vessels in the early 1980s. Ruffe are only known to exist in North America in Lake Superior and northern Lake Huron, and the potential for the spread of ruffe into the other Great Lakes is greatest by transport in ballast tanks of Great Lakes cargo ships. The Ruffe Task Force [RTF] of the Great Lakes Fishery Commission concluded that the ruffe is a serious threat to North American fishery resources, and unless prompt measures are taken to prevent its further spread the ruffe will continue to be transported or move to new sites in the Great Lakes and much of North America. After its initial colonization of North America in the St. Louis River/Duluth-Superior Harbor, the ruffe has become the most abundant species in the fish community there. As ruffe numbers increased, populations of yellow perch, walleye, and most endemic prey species declined sharply. Native fishes also declined in Europe and Russia after ruffe invaded lakes there. The RTF concluded that the ruffe poses serious threat to yellow perch, walleye, and possibly whitefish populations in the Great Lakes and to most inland freshwater fishery resources of North America. It appears likely that ruffe will become established in Lake Erie unless a method of controlling transfer and movement is found. The National Oceanic and Atmospheric Administration recently estimated that the annual loss of income to sport and commercial fishing due to ruffe in the Great Lakes alone could be $120 million annually. The eventual cost to the sport and commercial fisheries throughout the much broader range in North America, where the ruffe could establish populations, is potentially many times this figure. The ruffe is capable of inhabiting and establishing prolific populations in a broad range of aquatic habitats. It can be assumed that many more important fish species in other river and lake systems throughout North America will be adversely impacted.

The Ruffe Control Committee of the Aquatic Nuisance Species Task Force set a goal to prevent or delay the spread of ruffe through the Great Lakes and inland waters by containing the species to its current range. One of the objectives of the program is to prevent the transport of ruffe in the ballast water of ships. No technique is available to prevent the spread of ruffe by ballast water discharge within the Great Lakes or into the Mississippi River system. Ruffe could invade the Mississippi River system through the Illinois River Sanitary and Ship Canal that connects Lake Michigan with the Illinois River which empties into the Mississippi River.

### Goals and Objectives:

The goals of the project are to develop a technique that could prevent the: 1) transport of ruffe in ballast water, and 2) movement of ruffe into the Mississippi River system..

Sound could be used to repel ruffe from areas near vessels when they are taking on ballast, and also from the area near the Illinois River Canal when the lock opens. The objectives of the project will be to 1) identify which sound frequencies cause avoidance reactions by ruffe in laboratory tanks, and 2) determine whether specialized equipment is necessary to produce the frequencies that will repel ruffe.

### Project Description:

1. Collect ruffe from the St. Louis River estuary for laboratory research.
2. Conduct laboratory experiments at Loyola University on the sound spectrum from 30-500 Hz to determine which frequency shows the greatest avoidance response by ruffe. Only commercially-available equipment will be used in this phase of the laboratory research.
3. Conduct laboratory experiments at Oregon State University to determine whether specialized acoustic equipment is needed to produce avoidance responses by ruffe.

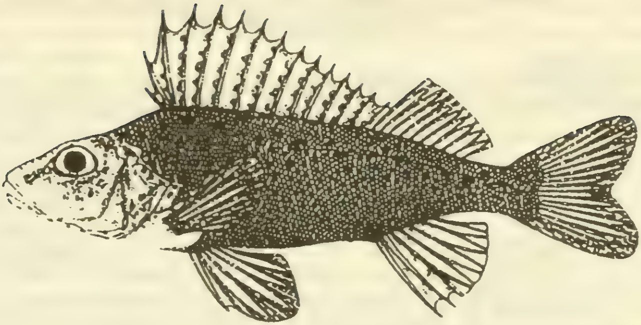
4. Develop a protocol to test the results of laboratory research in field experiments to verify avoidance responses outside of the laboratory tank facilities. Field testing will begin in the second year of this study.
5. Develop an acoustic system that could be used by Great Lakes shipping vessels, and at the locks at the Illinois River Canal, until results of field testing verifies laboratory results.

Ruffe will be subjected to sound frequencies of 30, 50, 75, 100, 150, 200, 300, 400, and 500 Hz in laboratory tanks. Trajectories and speeds of fish before and after the sound is turned on will be determined from videotapes that will be used to collect data for statistical analysis. After avoidance frequencies are determined, other frequencies near those will be tested to maximize avoidance responses [trajectories and speeds]. Two different systems will be used to produce sound to determine whether commercially-produced or specialized systems will be needed for systems deployed to repel ruffe in areas of the Great Lakes.

**Project Benefits:**
This project may provide an effective but environmentally-safe technique to prevent transport of ruffe in ballast of Great Lakes ships, and to prevent invasion by the species into the Mississippi River system. This technique could become an important component of an integrated pest management program for ruffe in the Great Lakes.

**Project Cost:**
FY-1997: $55,000 [Loyola Univ. of Chicago-$44,000, Univ. of Minn./St, Paul-$2,500, Oregon State Univ.-$2,500, and Fond du Lac and the National Biological Service-Ashland would divide the remaining $6,000 according to their field collection and study responsibilities.

**Project Investigators:**
L. Schwarzkopf [Fond du Lac Natural Resources Program], J. Janssen [Loyola Univ. of Chicago], P. Sorensen [Univ. of Minn./St. Paul], C. Schrenk [National Biological Service / Oregon State Univ.], and M. Hoff [National Biological Service-Ashland, Wisconsin].



*Adult life size: 3 to 5 inches*

# Ruffe

*Gymnocephalus cernuus*

The ruffe is a small European member of the perch family that is native to central and eastern Europe. It was introduced to Duluth harbor, probably in tanker ballast water, around 1985, and is spreading to other rivers and bays around Lake Superior.

In Europe, the ruffe is a pest species in newly invaded areas. In a Scottish lake it displaced the native perch population, and in lakes in Russia, it has significantly reduced whitefish populations.

In the St. Louis River near Duluth, populations of yellow perch, emerald shiners, and other forage fish caught in survey trawls have declined dramatically as numbers of ruffe have increased.

The ruffe's ability to displace other species in newly invaded areas is due to: (1) its high reproductive rate, (2) its feeding efficiency across a wide range of environmental conditions, and (3) characteristics that may discourage would-be predators such as walleye and pike.

Ruffe grow rapidly and can reproduce in their first year. In the St. Louis River, females can lay between 45,000 and 90,000 eggs a year. Ruffe are primarily bottom feeders, preferring dark environments where they can hide from predators. Ruffe rarely grow bigger than 5 inches, although the sharp spines on their gill covers, dorsal and anal fins make them difficult for larger fish to eat.

**Likely means of spread:** Ruffe could be accidentally transported in livewells, bilge water, bait buckets, and in the ballast water of Great Lakes freighters.

## Project Title: SEDIMENT CONTAMINANT MITIGATION AND PREVENTION FOR MERCURY AND PCB

### Statement of the Problem:

The continuing uptake of mercury and PCB into the aquatic food chain has contaminated the fish in our rivers and lakes. Fish Consumption Advisories issued by the Health Department (MDH, 1994) establish meal limits based on these contaminants. Our assessment studies have quantified the extent of mercury contamination throughout the St. Louis River Watershed and have identified contaminated hot-spots (Glass et al., 1992; Sorensen et al., 1992; Sorensen et al., 1993). The ongoing mercury deposition and sediment leaching of contaminants into the rivers and lakes continues to worsen the mercury levels in fish by 3% to 5% each year (Swain and Helwig, 1989). This increase in atmospheric mercury concentration has also been documented (Slemr and Langer, 1992). Soil (Nater and Grigal, 1992) and sediment (Swain et. al , 1992) mercury concentrations show recent additions of mercury reflecting the increased atmospheric loadings. The means to decrease and eliminate these contaminants from entering the aquatic food chain must be found, or the fish will soon be too toxic to consume. This would have serious long term consequences for the recreational and subsistence fishery throughout this region and elsewhere in the country.

In the case of the lower St. Louis River, mercury contamination in sediments has been assumed to be the primary source of mercury contamination in area fish. These sediments have accumulated contaminants behind the reservoir dams as a result of past industrial practices/discharges within the St. Louis River Watershed (MPCA/WDNR, 1992). Figure 1 shows mercury concentrations as a function of depth in sediment cores taken from the Thomson, Forbay, and Fond du Lac Reservoirs, in deep water depositional zones, downstream from former industrial and municipal discharges, where the maximum core depths represent a sediment accumulation since the early 1900's. The large peaks represent mercury usage and discharge between the 1940's and early 1960's.

Although the sediments shown in figure 1 have high mercury concentrations, the most contaminated strata seem safely buried by 50 cm to 150 cm of less contaminated material. This observation seems to contradict notable fish mercury contamination that still occurs (figure 2). These findings prompted our research group to conduct a more complete survey of mercury in sediments in the lower St Louis River reservoirs. The purpose of the research was to test the hypothesis that the 3 cores shown in figure 1 are typical for deep water depositional zones but are not necessarily representative of shallower areas or areas subject to variable water currents. That is, some areas in these reservoirs may exhibit high mercury concentrations in the top sediment layers, thus accounting, in part, for the elevated mercury levels in fish Preliminary results from our 1994 survey of sediments in the 6 reservoirs of the lower St. Louis River have in fact shown several areas where high mercury concentrations occur in the top sediment strata (figure 3)

### Mitigation options:

Recent research on iron as a remediation material shows promise for mitigating mercury and PCB contaminated sediments (Agrawal and Tratnyek, 1996)(Orth and Gillham, 1996). Limestone is also a promising mitigation material for contaminated sediments.

### Project Goals and Objectives:

The objective of this project is to continue testing mercury mitigation options using microcosms in the reservoirs of the lower St. Louis River and to then apply the best mitigation approach to a small portion of a reservoir area for a pilot mitigation demonstration study, and to study a set of lakes for testing mitigation options

### Project Description:

1 Develop methodology for measuring phenyl mercuric acetate [PMA] in contaminated sediment in order to identify and assess the magnitude of sediment contaminated with this compound.

2 Further investigation of sources of iron mitigation minerals and technology to prepare for mercury mitigation. Recent research shows promise in utilizing iron as a chemical reducing agent which may be used to alter mercuric compounds to less bio-accumalitive or less toxic forms.

3 Microcosms will be placed on identified contaminant hot spots on St. Louis River reservoirs to test various methods of immobilizing, covering, or removing contaminants from sediments. Benthic organisms, water, and sediment from these enclosures will be analyzed to determine reductions in contaminant levels.

The effectiveness of each mitigative treatment test will be determined by comparing contaminant concentrations in samples from treated vs. untreated enclosed areas (in addition to samples from adjacent areas outside the microcosms).

The mitigation strategies selected for demonstration testing must be cost effective and practicable to implement The mitigation strategies to be demonstrated is the addition of contaminant binding substrates, such as iron or limestone.

4 Mitigation tests will also be done on a moderately contaminated water body using sequestering agents or micro nutrient additions.

5 Shoreline runoff sampling will be performed to assess the degree of mercury coming from forested watersheds, associated wetlands, and deposition

6 Methods which show significant reductions in toxic residues in fish will be further tested on sites with high test levels of contaminants to determine the effectiveness of this approach and applicability to whole water-body treatment.

7 The method(s) demonstrated to be especially effective and efficient will be used in a large scale test on a portion of the reservoir(s), lakes, and/or streams during this study. A set of lake will be studied to develop baseline data on mercury levels in water, sediment, and fish, and limnological conditions, which is needed prior to a trial test of mitigation option(s) on one or two small lakes.

**Project Benefits:**

A successful means to reduce these toxic contaminants in fish would protect human health. The results would be transferable to aquatic systems in other regions

**Project Cost:**

**FY-1995:** Fond du Lac requested $275,000 - received $100,000 for phase 1 of mitigation study

**FY-1996:** Fond du Lac requested $250,000 - no additional funds were appropriated.

**FY-1997:** $160,000 requested by Fond du Lac to continue research in mitigation technology.

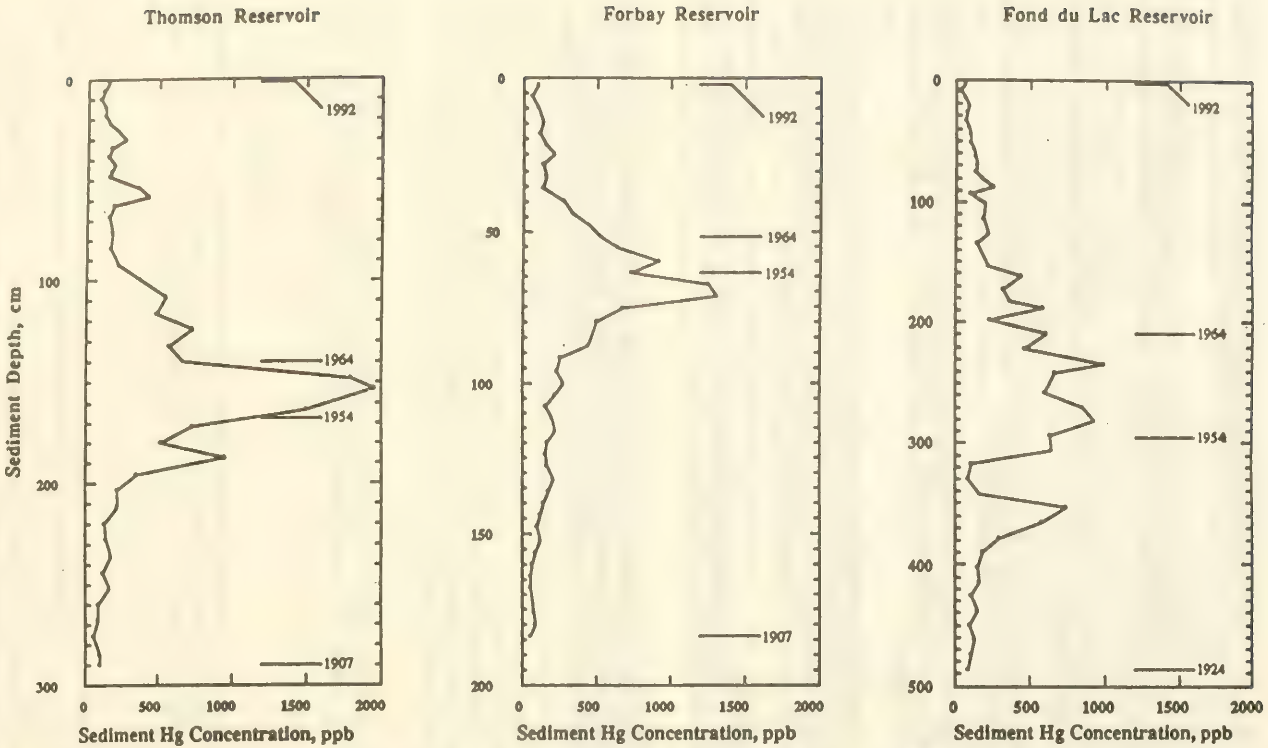
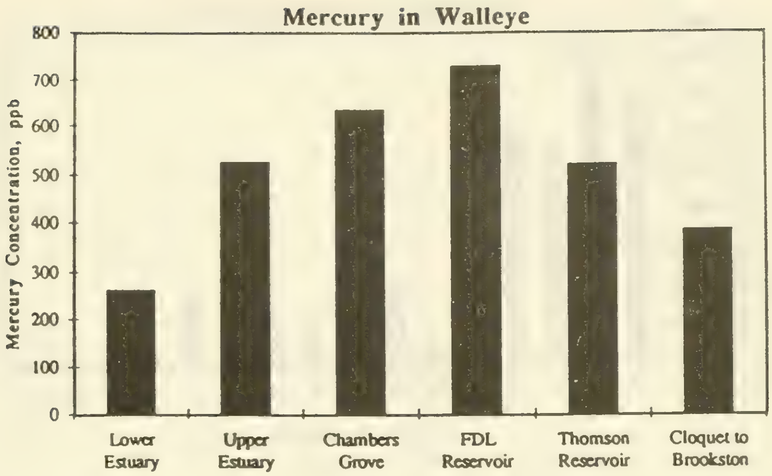


Figure 1. Mercury concentration (dw) in sediment as a function of depth into sediment cores taken from three reservoirs (Thomson, Forbay, and Fond du Lac) on the lower St. Louis River in 1992. Strata dating (between the 100 and 200 cm depth) was determined by Daniel Steck (personal communications). Glass *et al.* (unpublished).



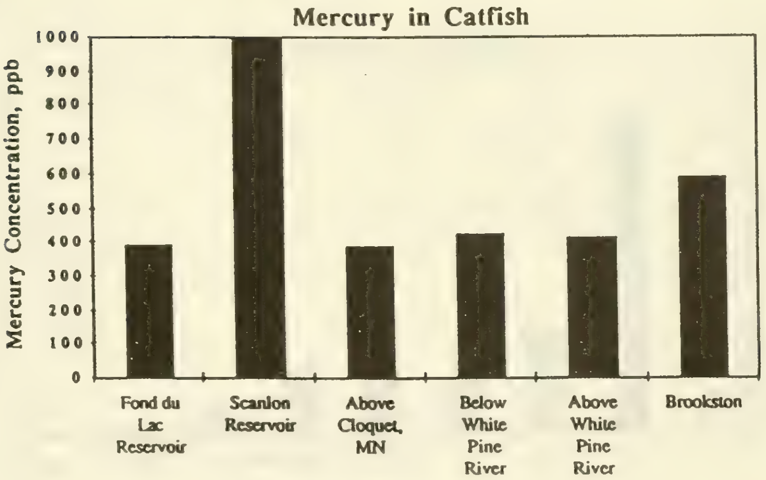
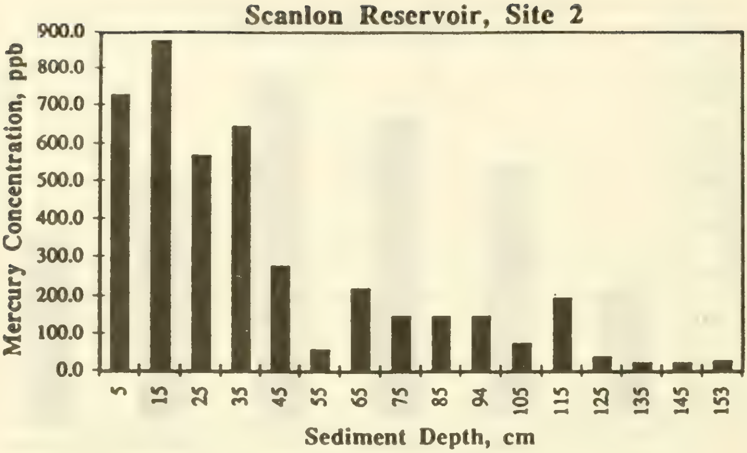


Figure 2. Mercury concentrations in 39 cm walleye (upper panel) and 49 cm catfish (lower panel) at various locations along the lower St. Louis River. Data are from Sorensen et al. (1992, 1993).



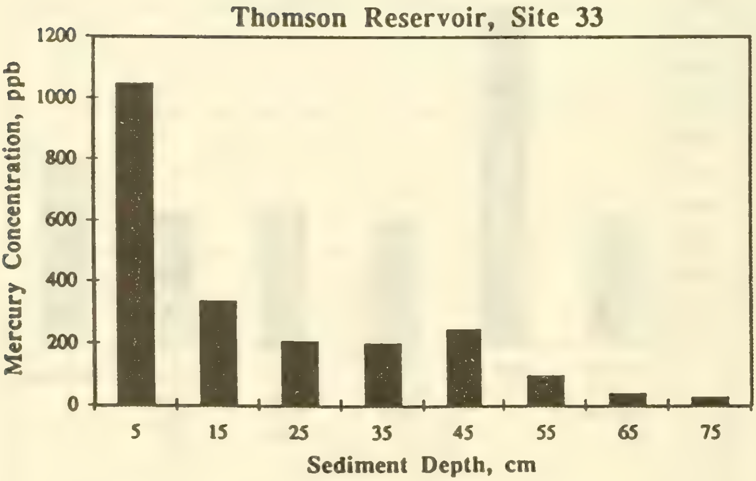


Figure 3. Sediment mercury concentrations as a function of depth into sediment for sampling sites in the Scanlon and Thomson Reservoirs showing high levels occurring near the surface. Data are from Sorensen (1995).

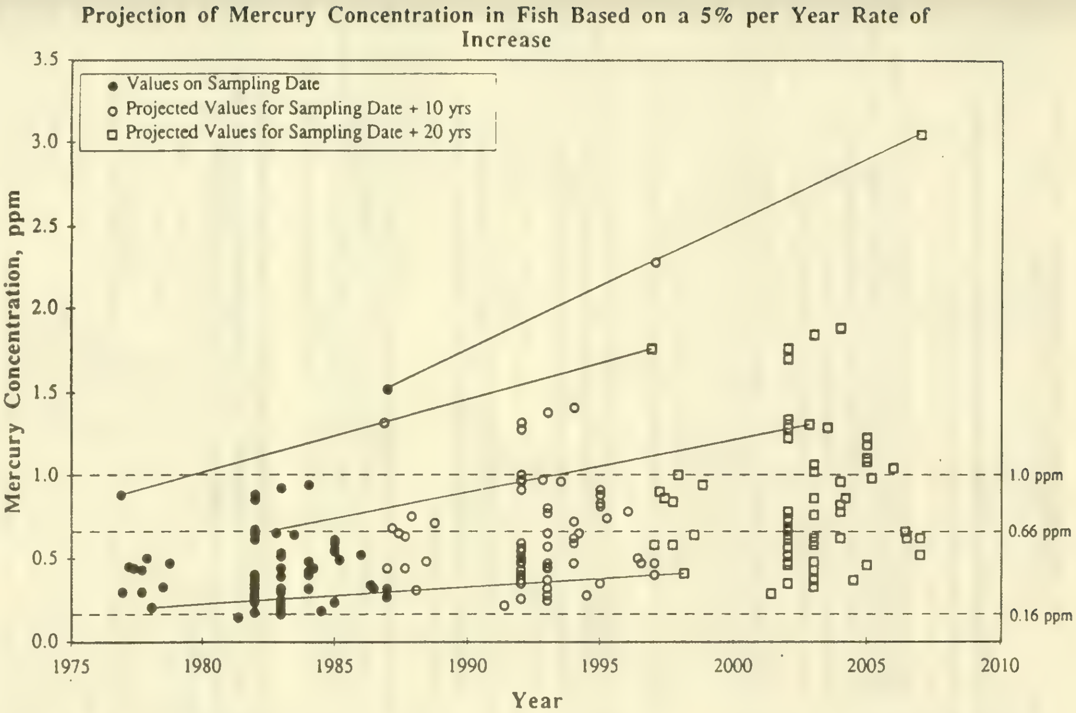


Figure 4. Projection of Mercury Concentration in Fish Based on a 5% per Year Rate of Increase. Mercury levels in 1.0 kg northern pike, based on 1976 to 1987 benchmark data on 65 lakes in NE Minnesota, are projected for later years assuming a 5% per year increase according to observations of Swain and Helwig (1989). Four of the 65 lakes are connected with a line to clarify the trend. The dashed lines indicate various advisory/restriction levels: 0.16 ppm to 0.66 ppm - children and women of child bearing age should consume no more than one fish meal per month and no consumption at levels greater than 0.66 ppm; and greater than 1.0 ppm - no commercial sale allowed by the USFDA.

## RESOLUTION # 1145/96

The Fond du Lac Reservation Business Committee, on behalf of the Fond du Lac Band of Lake Superior Chippewa, hereby enacts the following Resolution:

WHEREAS, the Fond du Lac Reservation is a sovereignty, created by the Treaty of September 30, 1854, 10 Stat. 1109, as the perpetual home of the Fond du Lac Band of Lake Superior Chippewa, which possesses the inherent jurisdiction and authority to exercise regulatory control within the boundaries of the Fond du Lac Reservation; and

WHEREAS, it is the sovereign obligation of the Fond du Lac Reservation Business Committee, as the Governing Body of the Fond du Lac Band, under the Indian Reorganization Act, 25 U.S.C. section 461 et seq., and in accordance with the Indian Self-Determination Act, 25 U.S.C. section 450 et seq., to assume responsibilities of self-government; and

WHEREAS the Fond du Lac Reservation Business Committee is committed to providing housing to the Fond du Lac Band Members and supports the proposal to the United States Congress to adequately fund the Fond du Lac Housing Authority; and

WHEREAS the Fond du Lac Reservation Business Committee is also committed to protecting the environmental quality and health and well being of the Fond du Lac Band Members.

**NOW THEREFORE BE IT RESOLVED,** that the Fond du Lac Reservation Business Committee does hereby approve the FY-1997 Testimony to the United States Congress - House and Senate Subcommittees on Appropriations for VA, HUD, and Independent Agencies.

We do hereby certify that the foregoing Resolution was duly presented and enacted upon by a vote of 3 for, 0 against, a quorum of 0 being present at a Special Meeting of the Fond du Lac Reservation Business Committee held on May 23, 1996, on the Fond du Lac Reservation.

Robert B. Peacock
Robert B. Peacock
Chairman

Peter J. Defoe
Peter J. Defoe
Secretary/Treasurer

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February 28, 1994

Mr. Larry Schwarzkopf
Natural Resources Specialist
Fond du Lac Reservation
105 University Road
Cloquet, MN 55720

Dear Larry:

Having reviewed and commented on the proposal "Control of Harmful Exotic Fish through Natural Spawning Pheromone Attractants", we wish to express support for the concept and willingness to participate in the project.

Few options exist for controlling harmful aquatic nuisance species. Research is needed on the basic biology of these species to identify a set of environmentally benign methods of control, within the framework of integrated pest management. The use of pheromones has recently been shown to be a potential addition to the aquatic pest manager's toolbox. The proposed research could produce benefits far in excess of its costs.

The Ashland Biological Station (Great Lakes Center, National Biological Survey) is the United States' primary fisheries research center on Lake Superior, and has led research on the ruffe in the St. Louis River and western Lake Superior since 1988. The Ashland Fishery Resources Office (Region 3, Fish and Wildlife Service) has a lead role in management efforts to contain the spread of ruffe. Within constraints of funding and personnel, both stations will participate in the project by collecting specimens, conducting field tests, and other appropriate means.

Sincerely,

Thomas R. Busiahn
Project Leader
Ashland Fishery Resources Office
Fish and Wildlife Service

James H. Selgeby
Chief
Ashland Biological Station
National Biological Survey

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March 1, 1994

Larry Schwarzkopf
Natural Resources Manager
Fond du Lac Natural Resources Program
105 University Road
Cloquet, Minnesota 55720

Dear Mr. Schwartzkopf:

As President of the Minnesota Chapter of the American Fisheries Society, I support your search for funding your research proposal, **Control of Harmful Exotic Fish Through Natural Spawning Pheromone Attractants.** The Minnesota Chapter of the American Fisheries Society is very concerned about the introduction and spread of exotic species and their detrimental effects on the aquatic environment. We are all familiar with the damage to aquatic ecosystems from the common carp (*Cyprinus carpio*).

The present species of concern is the ruffe (*Gymnocephalus cernuus*) and its spread into the watersheds of the Great Lakes. This species has potential to displace native and valuable forage and game fish species, and is currently expanding its range in Lake Superior.

Effective control techniques available to federal, state, and tribal resource agencies are limited. Chemical control is not generally acceptable to the public and is not practical for Lake Superior. Recent research has demonstrated little success with biological controls. I believe the American public does not want harmful exotic fish to continue to disrupt native fish stocks and degrade aquatic ecosystems. Your cooperative proposal with the University of Minnesota, U.S. Fish and Wildlife Service, and

National Biological Service to experiment with fish pheromones (natural chemicals) shows promise for controlling exotic species, and potential benefits greatly exceed costs.

Sincerely,

Bill Thorn
William Thorn
President, Minnesota Chapter
American Fisheries Society

## PREPARED STATEMENT OF THE GENERAL ACCOUNTING OFFICE

Mr. Chairman and Members of the Subcommittee:

We are pleased to have this opportunity to comment on the Department of Housing and Urban Development's (HUD) fiscal year 1997 budget request. When we appeared before the House Appropriations Committee on March 27, 1996,[1] we noted that for the foreseeable future, HUD's programs would be at high risk because of their vulnerability to waste, fraud, and abuse and that limited progress had been made to address HUD's the programmatic and budget problems. We also said that although the Congress and HUD had made a start at reexamining HUD's policies on housing and community development, reaching a consensus would take time and that few of HUD's proposals for reinventing itself had been adopted. Many of our observations on this year's proposed budget were reflected in our March testimony, and today we raise several new concerns. This information is based on our past work and on several ongoing assignments for the Congress (see appendix I).

Our statement today will discuss (1) HUD's multi-family reengineering cost estimates, (2) the proposed bonus pools for high performing participants in four of HUD's six proposed block grants to consolidate existing programs, (3) and HUD's progress in addressing the management deficiencies we described in our high-risk report.[2]

In summary:

- HUD's estimates of how multifamily portfolio reengineering will affect its budget in fiscal year 1997 and over the next 6 years may not be reliable. The uncertainty stems in part from HUD's use of "best guesses" to develop some estimates rather than basing them on current, project-specific data. However, information that HUD recently obtained from an Ernst & Young study of the multifamily portfolio should help address this weakness. Furthermore, HUD's assumptions about how quickly it will be able to restructure projects with high subsidy costs appear optimistic and could be causing HUD to understate its need for appropriations to assist low-income renters.

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[1] Housing and Urban Development: Limited Progress Made on HUD Reforms (GAO/T-RCED-96-112, Mar. 27, 1996).

[2] High-Risk Series: Department of Housing and Urban Development (GAO/HR-95-11, Feb. 1995).

- HUD's proposal to provide $845 million in performance bonuses to grantees at the close of fiscal year 1997 could be premature. Although establishing performance measures could lead to greater program accountability, HUD has not yet undertaken the time-consuming effort to fully develop appropriate measures, the key details for implementation, or information systems adequate to support performance measurement systems. Not only are these elements necessary to a fair allocation of bonuses to grantees, but grantees need to know them before the assessment period begins. Therefore, we believe that HUD will not be ready to award performance bonuses next year.

- As we first reported in January 1994 and several times since then, four long-standing, Department-wide management deficiencies--weak internal controls, an ineffective organizational structure, an insufficient mix of staff with the proper skills, and inadequate information and financial management systems--led to our designating HUD as a high-risk area. To address these problems, HUD has proposed several initiatives in its Departmentwide reinvention document called Blueprint II, and we believe that HUD has taken steps in the right direction by requesting funding in its fiscal year 1997 budget to implement several of these initiatives. Nevertheless, because the problems are longstanding and complex, the Department likely will remain in high-risk status for some time to come.

## HUD'S FY 1997 BUDGET AND PROGRAMS

Established in 1965, HUD is the principal federal agency responsible for the programs dealing with housing and community development and fair housing opportunities. Among other things, HUD's programs provide (1) mortgage insurance to help families become homeowners and to help provide affordable multifamily rental housing for low- and moderate-income families, (2) rental subsidies for lower-income families and individuals, and (3) grants and loans to states and communities for community development and neighborhood revitalization activities.

HUD's fiscal year 1997 budget proposal requests about $22 billion in discretionary budget authority and plans about $33 billion in discretionary outlays. Compared with HUD's fiscal year 1996 appropriation, this request represents about a 7-percent increase in budget authority and 10 percent increase in outlays. HUD believes that this increase in outlays between fiscal years 1996 and 1997 is somewhat misleading. For example, 1996 outlays were unusually low because HUD expended $1.2 billion–which normally would have been disbursed early in fiscal year 1996–in late fiscal year 1995 because of the government shutdown. In addition, reforms in the mortgage assignment program generated a significant one-time savings of over $1 billion in fiscal year 1996 (under credit reform as scored by the Congressional Budget Office).

HUD's March 1995 blueprint, HUD Reinvention: From Blueprint to Action, proposed to merge 60 of its 240 separate programs into three performance-based funds that would be allocated directly to the states and localities. HUD's objectives were to provide communities with greater flexibility and instill a level of accountability in its programs through the use of performance measures and a series of rewards and incentives. As of March of this year, few of the proposals in this reinvention document have been adopted. HUD's second reinvention proposal, Renewing America's Communities from the Ground Up: The Plan to Continue the Transformation of HUD, also known as Blueprint II, would supersede the first proposal but continue the mcve toward accountability by fiscal year 1998 by (1) consolidating over 20 community development programs into three performance funds where high-performing grant recipients would be awarded bonuses, (2) replacing 15 separate public housing programs with two performance funds, and (3) consolidating the 14 existing voucher and certificate funds. Appendix II summarizes HUD's plans to fund the proposals in Blueprint II through its fiscal year 1997 budget request.

## UPDATED DATA MAY ASSIST IN EVALUATING HUD'S MULTIFAMILY REENGINEERING COST ESTIMATES

HUD's fiscal year 1997 budget request discusses how a planned, major restructuring of the multifamily housing program is likely to affect its budget over the next 6 years and beyond. The restructuring is aimed at addressing serious and longstanding problems affecting properties with HUD-insured mortgages that also receive rental subsidies tied to units in the properties (project-based assistance). HUD deserves credit for attempting to address these complex problems. However, HUD's assumptions about its ability to quickly restructure properties with high subsidy costs appear overly optimistic and could be responsible for HUD underestimating its request for rental assistance for low-income families.

According to HUD's latest data, 8,636 properties with about 859,000 apartments would be subject to the restructuring proposal; the unpaid loan balances for these properties total about $17. 8 billion. In many cases, HUD pays higher amounts to subsidize properties than are needed to provide the households living in them with decent, affordable housing. In other cases, rents set by HUD are lower than required to maintain the properties' physical condition, contributing to poor living conditions for families with low incomes. Initially termed "mark to market" in last year's budget request, and now referred to as "multifamily portfolio reengineering," the goal and general framework of HUD's proposal remain the same: eliminate excess subsidy costs and improve the poor physical condition of some of the properties by relying primarily on market forces.

Specifically, for properties with mortgages insured by FHA that also receive project-based assistance, HUD has been proposing to let the market set the property rents to market levels and reduce mortgage debt if necessary to permit a positive cash flow.[3] In addition, HUD has proposed replacing project-based rental subsidies with portable tenant-based subsidies, thereby requiring the properties to compete in the marketplace for residents. While maintaining this general framework, HUD made several changes to its proposal this year. For example, under the initial proposal all rents would have been reset to market levels whether the market rents were above or below the subsidized rents. The current proposal gives priority attention initially to properties with subsidized rents above market. In addition, HUD plans to let state and local governments decide whether to continue with project-based rent subsidies after mortgages are restructured or to switch to tenant-based assistance. HUD has also indicated that it will allow owners to apply for FHA insurance on the new, restructured mortgage loans, whereas last year the proposal expressly disallowed FHA insurance on restructured loans.

We are currently evaluating a study by Ernst & Young LLP released on May 2, 1996, that was designed to provide the Department with current information on HUD's multifamily portfolio. This information could form the basis for the improvement of key assumptions needed to estimate the net savings or costs associated with the reengineering proposal. In this regard, HUD's contract with Ernst & Young LLP requires that the firm update HUD's information on (1) market rents versus the project-based rents that the agency subsidizes and (2) the physical condition of the properties.[4] These two variables strongly influence whether a property can operate at market rents without debt reduction or what amount of debt reduction is needed to cover the property's expenses. Having good data on these variables will allow FHA to better develop claims estimates which will be based on the amount of debt write-down. In addition, the rent data are integral to estimating the change in subsidy costs if the project-based rents are replaced with market rents and the residents receive tenant-based assistance. HUD also tasked Ernst & Young with developing a financial model that would show the likely result of reengineering the portfolio and identify the related subsidy costs and claims costs.

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[3] Debt restructure amounts will likely be reflected as claims costs in the Federal Housing Administration General Insurance and Special Risk Insurance Accounts.

The results of the Ernst & Young study were not available when the fiscal year 1997 budget was being developed. Because HUD lacked the project-specific data contained in the Ernst & Young study, HUD used assumptions in some cases that represent the Department's "best guess" as to outcome. These assumptions can affect the budgetary savings HUD expects to result from reengineering the portfolio. Ernst & Young's May 2, 1996, report presents information on projects that are expected to be affected by this reengineering. While the report did not directly discuss subsidy and claims costs, we are currently reviewing the results of this study and its cost implications. We plan to issue our report on the Ernst & Young study this summer.

On the basis of our ongoing work, we believe that some of the assumptions HUD used may overstate the projected savings associated with reengineering the portfolio. We cannot, however, determine the extent of that overstatement at this time. One of HUD's assumptions is that a substantial number of mortgages with excess subsidy costs will be restructured well ahead of the dates that their rental assistance contracts expire. Although the extent to which HUD will be able to accomplish this remains unclear, this assumption appears optimistic and HUD's budget request may understate its need for funding to renew section 8 rental assistance contracts for fiscal year 1997 and beyond.

## HUD NEEDS MORE TIME TO ESTABLISH A PROGRAM OF PERFORMANCE BONUSES

In its fiscal year 1997 budget, HUD requested $845 million in bonus funding for high-performing grantees in four of its six new block grants. HUD calls the block grants

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[4] The study is based on a national sample of properties with both insurance and project-based assistance. The sample was designed to meet a 90 percent confidence level, with a plus or minus 10 percent relative precision for the overall population.

"performance funds." HUD believes that these grants will provide communities with greater flexibility to design local solutions to local problems. HUD plans to competitively award bonuses to grantees who exceed the established performance measures and who submit project proposals. (App. III summarizes the details of the proposed bonus pools.)

We generally support performance measurement as a method of building accountability into block grants because it would allow grantees to achieve objectives while also vesting them with responsibility for their choices. Moreover, HUD's development of block grants and performance measures would be consistent with the underlying principles of the Government Performance and Results Act and recommendations for program consolidation made by the National Performance Review. However, the characteristics of the block grants themselves--their program breadth and the flexibility allowed the grantees--will greatly complicate and add significant time to HUD's development of uniform performance measures. HUD is still in the early stages of developing such measures, however, and without them grantees will have difficulty understanding HUD's objectives and performance measurement process. Moreover, because of inadequate information systems to support performance measurement, we question whether HUD's request for bonus funding can be effectively used during fiscal year 1997.

### Implementing Performance Funds Will Be Complicated and Time-Consuming

Some features inherent to block grants will complicate the implementation of a performance measurement system in fiscal year 1997. These complications would result in extending beyond fiscal year 1997 the time HUD needs to develop adequate measures. We have reported in the past, for instance, that the flexibility and wide latitude allowed grantees make common and comparative measurement very difficult. HUD will need to collaborate with the states to develop performance measures and establish reporting requirements. These entities' interests could vary markedly because HUD would be looking to meet national objectives, while the states are trying to meet local needs. Not only do the federal and state interests differ, but it will take time for both to develop data collection systems and reporting capacities once the initial decisions are made.

In addition, measurement is complicated because all observed outcomes cannot be assumed to result from the programs and activities under scrutiny. Some outcomes, such as job creation, will be affected by factors outside of the control of program participants, while other desired outcomes, such as enhanced quality of life for residents, may not be quantifiable. Moreover, our work on block grants at other federal agencies has shown that many of these agencies lack the ability to track progress, evaluate results, and use performance data to improve their agencies' effectiveness.[5] For example, HUD's Inspector General ( IG) recently found that HUD is just beginning to develop a Department-wide strategic plan, the key underpinning and starting point for the process of program goal-setting and performance measurement that the Government Performance and Results Act seeks to establish throughout the federal government.[6]

Program performance information comes from sound, well-run information systems that accurately and reliably track actual performance against the standards or benchmarks.[7] Our work has shown, however, that HUD's information systems may not be adequate to support the implementation of the four bonus pools. For example, HUD is proposing a $500 million bonus fund as part of its public housing capital fund. As a requirement for eligibility, housing authorities would have to have earned high scores in the Public Housing Management Assessment Program (PHMAP) and have undertaken substantive efforts to link residents with education and job training.[8] However, HUD generally does not confirm the scores of high scoring housing authorities--many of the data to support the scores are self-reported--and generally accepts the scores as accurate. Our analysis, as well as that of the HUD IG and others, has cast doubt on the accuracy of PHMAP scores for some housing authorities.[9] Three major public housing industry associations also share concerns about PHMAP's use as a tool for awarding bonuses. And finally, HUD itself recently acknowledged that PHMAP scores should not be considered the sole measure of a public housing authority's performance, noting that circumstances can exist in which the best decision a housing authority can make is not always the one that yields the highest PHMAP score in the short term.[10] We believe, therefore, that PHMAP--as it is currently implemented--should not be used as a basis for awarding bonuses to public housing authorities.

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[5] For a more complete discussion of accountability with block grants see Block Grants: Issues in Designing Accountability Provisions (GAO/AIMD-95-226, Sept. 1, 1995).

[6] Under this act, no later than September 30, 1997, federal agencies must submit strategic plans covering a period of at least 5 years to the Office of Management and Budget which, as part of its effort to link the act and the budget process, is requiring agencies to submit parts of their strategic plans by June 7, 1996.

[7] The EZ/EC program defines benchmarks as the long-term desired outcome by which progress and achievement are measured. Under this definition, its "benchmarks" are similar to strategic goals.

[8] Under the assessment program, a score of less than 60 on a 100-point scale earns a housing authority the performance classification of "troubled"; a score of from 60 to 90 earns the housing authority the classification of "standard performer"; and a score over 90 earns the housing authority the classification of "high performer."

[9] Housing and Urban Development: Public and Assisted Housing Reform (GAO/RCED-96-25, Oct. 13, 1995).

[10] "Office of the Assistant Secretary for Public and Indian Housing; Public Housing Management Assessment Program," Federal Register, Vol. 61, No. 88, May 6, 1996, p. 20358.

HUD has said that it intends to draw on its Empowerment Zone/Enterprise Community (EZ/EC) experience with benchmarking to move toward performance-based funding for all HUD programs. However, HUD officials said that developing benchmarks for the first round of EZ/EC grants was a difficult task and they recognize that HUD could have done a better job of explaining the process of developing benchmarks to communities.

Given this difficulty and the complications mentioned earlier, we are concerned that HUD is still in the midst of developing its bonus program and measures for its performance funds. In its fiscal year 1997 budget, the Department is requesting $11 million for its Office of Policy Development and Research to continue developing quantifiable measures for each major program, a process for setting benchmarks with grantees, and improvements in how the Department uses information on program performance. Because this development is ongoing, the measures and the processes will not be in place and known to the grantees before HUD uses them to award bonuses with fiscal year 1997 funds.

HUD officials believe that bonus funding needs to be offered during fiscal year 1997 to encourage the states and localities to seek higher performance and that the details will be worked out as the program is implemented. We believe that timing is critical in this matter. For the performance bonuses to have equity and merit, HUD needs to be able to specify prior to the year over which performance is measured what results and outcomes will be rewarded and how they will be measured.

## HUD'S BUDGET PROPOSES FURTHER ACTION TO ADDRESS MANAGEMENT DEFICIENCIES

As we have reported,[11] four long-standing, Department-wide management deficiencies led to our designation of HUD as a high-risk area in January 1994.[12] These deficiencies were weak internal controls, an ineffective organizational structure, an insufficient mix of staff with the proper skills, and inadequate information and financial management systems. In February 1995, we reported that HUD's top management had begun to focus attention on overhauling the Department's operations to correct these management deficiencies.[13] In that report, we outlined actions that the agency needed to take to reduce the risk of waste, fraud, and abuse.

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[11] Housing and Urban Development: Limited Progress Made on HUD Reforms (GAO/T-RCED-96-112, Mar. 27, 1996).

[12] Improving Government: Actions Needed to Sustain and Enhance Management Reforms (GAO/T–OGC-94-1, Jan. 27, 1994).

[13] High-Risk Series: Department of Housing and Urban Development (GAO/HR-95-11, Feb. 1995).

In reviewing the proposed 1997 budget, we found budgetary support for the implementation of several of these recommendations. First, we recommended consolidating programs to give the communities greater flexibility in applying for funds and reducing administrative burden. The 1997 budget proposes the consolidation of many individual programs, either now or in the near future, into block grant programs to increase participants' flexibility. HUD is beginning to develop performance measures for many programs to assess the participants' progress. Second, we recommended that HUD be authorized to use more innovative initiatives to leverage private investment in community development and affordable housing. Several HUD programs will now or in the future involve mechanisms such as grant proposals or loan programs that will require either participation or investment by private organizations. In addition, FHA proposes creating new mortgage products that would expand homeownership and that would share risk with other entities.

Third, we recommended that HUD continue to strengthen and coordinate its long-range planning. The budget proposal describes new investments to upgrade and expand its computer systems to specifically support implementation of Blueprint II. HUD anticipates that the proposed investments will improve efficiency and reduce operating costs.

However, HUD's budget proposes several new, specialized initiatives that seem to run counter to the agency's consolidation efforts to, as described in Blueprint II, "sweep away the clutter of separate application procedures, rules and regulations that has built up at HUD over the past 30 years." For example, HUD is requesting $290 million for its Housing Certificate Fund to assist several groups of people needing preferred housing. These programs include the Welfare-to-Work initiative and housing for homeless mothers with children. However, this funding request is inconsistent with Blueprint II, in which HUD urges the Congress to do away with the statutes that require such preferences.

Although the Department deserves credit for its continuing resolve in addressing its long-standing management deficiencies, HUD's recently initiated actions are far from reaching fruition, and the agency's problems continue. In addition, specialized programs are beginning to reappear, and they may undermine the major restructuring of the agency, reduce efficiency, and increase administrative burdens. Therefore, we believe that both now and for the foreseeable future, the agency's programs will continue to be high-risk in terms of their vulnerability to waste.

## CONCLUSIONS

Our statement today discussed several issues that will affect HUD's programs and their need for appropriations. We identified new issues and highlighted changes in other issues on which we have previously testified. By continuing to focus on improving its internal management and coming to closure on how and when it will use the market to eliminate excess subsidy costs and improve the poor physical conditions of its assisted multifamily housing, HUD will be better able to use additional appropriations and implement new policy. Although HUD has recognized many of its management deficiencies and has budgeted funds to address them, we see this as a long-term effort that will continue into the foreseeable future.

In connection with the proposed bonus pools, the lack of adequate performance measures and associated information systems leads us to question the basis for awarding additional funding at this time. While HUD officials believe that the details of awarding bonuses will be worked out as the program is implemented, we believe that they are overly optimistic, given the magnitude of the bonus pools and the complexity of developing appropriate performance measures.

## MATTER FOR CONGRESSIONAL CONSIDERATION

We recommend that the Congress consider not appropriating the $845 million for HUD's proposed bonus pool funding until the Department develops adequate performance measures and supporting information systems to ensure that these funds are used effectively.

## APPENDIX I

## SELECTED GAO PRODUCTS

Housing and Urban Development: Limited Progress Made on HUD Reforms (GAO/T-RCED-96-112, Mar. 27, 1996).

FHA Hospital Mortgage Insurance Program: Health Care Trends and Portfolio Concentration Could Affect Program Stability (GAO/HEHS-96-29, Feb. 27, 1996).

GPRA Performance Reports (GAO/GGD-96-66R, Feb. 14, 1996).

Homeownership: Mixed Results and High Costs Raise Concerns About HUD's Mortgage Assignment Program (GAO/RCED-96-2, Oct. 18, 1995).

Multifamily Housing: Issues and Options to Consider in Revising HUD's Low-Income Housing Preservation Program (GAO/T-RCED-96-29, Oct. 17, 1995).

Housing and Urban Development: Public and Assisted Housing Reform (GAO/T-RCED-96-25, Oct. 13, 1995).

Block Grants: Issues in Designing Accountability Provisions (GAO/AIMD-95-226, Sept. 1, 1995).

Property Disposition: Information on HUD's Acquisition and Disposition of Single-Family Properties (GAO/RCED-95-144FS, July 24, 1995).

Housing and Urban Development: HUD's Reinvention Blueprint Raises Budget Issues and Opportunities (GAO/T-RCED-95-196, July 13, 1995).

Public Housing: Converting to Housing Certificates Raises Major Questions About Cost (GAO/RCED-95-195, June 20, 1995).

Government Restructuring: Identifying Potential Duplication in Federal Missions and Approaches (GAO/T-AIMD-95-161, June 7, 1995).

HUD Management: FHA's Multifamily Loan Loss Reserves and Default Prevention Efforts (GAO/RCED/AIMD-95-100, June 5, 1995).

Program Consolidation: Budgetary Implications and Other Issues (GAO/T-AIMD-95-145, May 23, 1995).

Government Reorganization: Issues and Principles (GAO/T-GGD/AIMD-95-166, May 17, 1995).

Managing for Results: Steps for Strengthening Federal Management (GAO/T-GGD/AIMD-95-158, May 9, 1995).

Multiple Employment Training Programs: Most Federal Agencies Do Not Know If Their Programs Are Working Effectively (GAO/HEHS-94-88, Mar.2, 1994).

Multifamily Housing: Better Direction and Oversight by HUD Needed for Properties Sold With Rent Restrictions (GAO/RCED-95-72, Mar. 22, 1995).

Block Grants: Characteristics, Experience, and Lessons Learned(GAO/HEHS-95-74, Feb. 9, 1995).

High-Risk Series: Department of Housing and Urban Development (GAO/HR-95-11, Feb. 1995).

Program Evaluation: Improving the Flow of Information to the Congress (GAO/PEMD-95-1, Jan. 30, 1995).

Housing and Urban Development: Major Management and Budget Issues (GAO/T-RCED-95-86, Jan. 19, 1995, and GAO/T-RCED-95-89, Jan. 24, 1995).

Federally Assisted Housing: Expanding HUD's Options for Dealing With Physically Distressed Properties (GAO/T-RCED-95-38, Oct. 6, 1994).

Rural Development: Patchwork of Federal Programs Needs to Be Reappraised (GAO/RCED-94-165, July 28, 1994).

Federally Assisted Housing: Condition of Some Properties Receiving Section 8 Project-Based Assistance Is Below Housing Quality Standards (GAO/T-RCED-94-273, July 26, 1994, and Video, GAO/RCED-94-01VR).

Public Housing: Information on Backlogged Modernization Funds (GAO/RCED-94-217FS, July 15, 1994).

Homelessness: McKinney Act Programs Provide Assistance but Are Not Designed to Be the Solution (GAO/RCED-94-37, May 31, 1994).

## APPENDIX II

## TABLE 1. SUMMARY OF MAJOR PROPOSALS AND BUDGET REQUESTS

| | **Blueprint II** | **FY 1997 Budget Request** |
|---|---|---|
| Community Development Block Grants Fund (CDBG)[a] | Grantees will use their formula funds for the present wide range of activities eligible under CDBG, but two new features added–performance measures and benchmarks, and a bonus pool. The bonus pool will be devoted exclusively to job creation and economic revitalization efforts. | The budget proposes $4.6 billion for the CDBG fund in 1997. In addition, $300 million is requested for a second round of Empowerment Zone/Enterprise Communities grants ($200 million) and a competitive Economic Development Challenge Grant ($100 million) for high-performing jurisdictions. |
| HOME Fund[b] | Grantees will use their formula funds to expand the supply of affordable housing. The fund will require grant recipients to set their own performance measures and benchmarks. Ten percent of the fund will be set aside as a bonus pool to create large tracts of homeownership in communities. | The budget proposes a total of $1.55 billion for HOME in 1997, including $1.4 billion for the HOME Fund and $135 million for the HOME Fund Challenge Grant for Homeownership Zones. The Budget also proposes to use $15 million of funds provided for the HOME Fund for Housing Counseling. |

| | **Blueprint II** | **FY 1997 Budget Request** |
|---|---|---|
| Homeless Assistance Fund (HAF)[c] | The HAF will allow grantees to shape a comprehensive, flexible, coordinated "continuum of care" approach to solving rather than institutionalizing homelessness. Ten percent of the fund will be set aside as a bonus pool. | The budget proposes $1.12 billion for the HAF in 1997. Of this total, $1.01 billion will be for a consolidated needs-based homeless assistance program, and the remaining $110 million will be for the Homeless/Innovations Challenge Grant. |
| Public Housing Operating Fund[d] | HUD will re-propose consolidating several programs (i.e., drug elimination grant, service coordinators) into one Operating Fund by FY 1998. All existing eligible uses under these funds, plus expanded anti-crime activities, will be permitted under the Operating Fund. | The budget proposes $2.9 billion for the Operating Fund, an increase of $100 million over the anticipated $2.8 billion for fiscal year 1996. |

| | Blueprint II | FY 1997 Budget Request |
|---|---|---|
| Public Housing Capital Fund* | HUD will re-propose consolidating a series of separate programs into one Capital Fund by FY 1998. This new Fund will largely be modeled after the current modernization program. Eligible activities will include those currently eligible under modernization programs, under programs for distressed public housing developments, and under the development and Family Investment Center Programs. HUD will set aside 10 percent of the Capital Fund as a bonus pool. HUD plans to jump start the Campus of Learners initiatives in fiscal year 1996 by requiring all applications for redevelopment under the public housing capital programs to build in educational, technological, and job linkages. PHA's will need to build viable partnerships with local educational and job placement institutions to be eligible for funding. | The budget proposes an appropriation of $3.2 billion for the Capital Fund in 1997. Two-hundred million will be made available for Indian housing construction. The budget assumes that $500 million will be made available in a separate account for a Capital Bonus Fund. The budget does not allocate a specific dollar amount to be used for the Campus of Learners initiative. However, PHA's are encourage to use capital funds to advance this endeavor. |

| | Blueprint II | FY 1997 Budget Request |
|---|---|---|
| Housing Certificate Fund[f] | HUD will re-propose consolidating the existing voucher and certificate funds into one performance-based Certificate Fund. The Certificate Fund will be HUD's principal tool for addressing what HUD considers the primary source of severe housing problems in the nation: lagging household incomes and high housing costs. | The budget is requesting an appropriation of $290 million for fiscal year 1997 for the Certificate Fund for 50,000 incremental units, of which 30,000 units will be used to help families make a transition to work (25,000 units) and help homeless mothers with children obtain housing (5,000 units). The additional 20,000 units will be used for tenant protection to support families in FHA-insured assisted housing projects directly affected by prepayment, disposition or restructuring. |

[a] The Community Development Block Grant Fund will comprise the CDBG and Economic Development Challenge Grant.

[b] The HOME Fund comprises the Home Investment Partnership Program (HOME), and the HOME Fund Challenge Grant.

[c] The Homeless Assistance Fund will consolidate HUD's six McKinney homeless assistance programs–Shelter Plus Care, Supportive Housing, Emergency Shelter Grants, Section 8 Moderate Rehabilitation (Single Room Occupancy), Rural Homeless Grants, and Safe Havens, as well as the Innovative Homeless Initiatives Demonstration Program. It will also include the Homeless/Innovations Challenge Grant.

[d] The Public Housing Operating Fund will consolidate the Public and Indian Housing Operating Subsidies.

[e] The Public Housing Capital Fund will consolidate the Public Housing Modernization, Public and Indian Housing Development, Major Reconstruction of Obsolete Public Housing (MROP) Projects, amendments, lease adjustments, and Family Investment Centers.

[f] The Housing Certificate Fund consolidates the Section 8 Certificates, Section 8 Vouchers, Section 8 Contract Renewals, Section 8 Family Unification, Section 8 for Persons with Disabilities, Section 8 for Persons with AIDS, Section 8 for Homeless, Section 8 Opt-Outs, Section 8 Counseling, Section 8 Pension Fund Certificates, Section 8 Veterans Affairs Supportive Housing, Section 8 Headquarters Reserve, Lease Adjustments, and Family Self-Sufficiency Coordinators programs.

# APPENDIX III

Table 2. Proposed Requests for and Basis for Awards in HUD's Bonus Pools[1]

| **Fund/ account** | **Request (total)** | **Bonus fund title** | **Bonus fund** | **Basis for award** | **Allocation and allowable uses for bonus funds** |
|---|---|---|---|---|---|
| Public Housing Capital Fund | $3.2 billion | Capital Bonus Fund | $500 million | Public Housing Authorities (PHAs) need to have scores of 90 or higher under Public Housing Management Assessment Program (PHMAP) and undertaken substantive efforts to link residents with educational, self-sufficiency intitiatives, or "Campus of Learners" activity. | The bonus fund will be split among elegible PHAs based on the Caital Fund formula, and bonus funds may be used for any uses elegible under the Capital Fund. |
| CDBG Fund | $4.9 billion | Economic Development Challenge Grant | $100 million | Any CDBG grantee that meets program requirements, meets or exceeds performance measures and benchmarks included in its Consolidated Plan, and demonstrates that it has expended grant funds on a timely basis.<br>Awards given on a competitive basis to high performing jurisdictions that propose innovative economic revitalization and job creation strategies using a combination of their own resources, private capital, and federal program incentives. | Funds are to address brownfields, generate economic revitalization in distressed communities, link people in these communities to jobs. |
| HOME Fund | $1.55 billion | HOME Fund Challenge Grant | $135 million | Bonus funding is a "challenge grant" awarded on a competitive basis to high-performing jurisdiction that propose creative, cost-effective homeownership strategies using a combination of their own resources, private capital, and federal program incentives. | Funds will be used to create Homeownership Zones to support state/local efforts to develop homeownership opportunities in targeted areas. Families earning up to 115 percent of the median income could be assisted. |
| Homeless Assistance Fund | $1.12 billion | Homeless/ Innovations Challenge Fund | $110 million | Competitive basis to high-performing jurisdictions that address national priorities such as homeless persons with multiple diagnoses, particularly mental illness and/or drug/alcohol addictions<br>Jurisdications need to propose creative strategies using a combination of their own resources, private capital, and federal program. | Bonus funding is to address the stated national priorities. |

[1] Congressional Justification for 1997 Estimates, HUD, Part 1, April 1996.

## PREPARED STATEMENT OF FATHER T. BYRON COLLINS, S.J., ASSISTANT TO THE PRESIDENT OF GEORGETOWN UNIVERSITY

Dear Mr. Chairman and members of this committee:

I am Father T. Byron Collins, S.J., Assistant to the President of Georgetown University. This committee provided funds for a unique international program to start small business centers in Bogota, Colombia and Quito, Ecuador. The funds provided were from the Multilateral Investment Fund (MIF) established by this committee as part of the operation of the IDB.

After several years of preparation, this program is under way. Georgetown University School of Business is using a NASA ACTS satellite to connect with the Javeriana University in Bogota, Colombia and with The Pontifical Catholic University in Quito, Ecuador, all of which are Jesuit universities. The grant from the Multilateral Investment Fund which is administered by IDB is for a three year period. The total of the grant is $5 million and is matched from private sources. Eighty percent of this grant will go to the Latin American Universities. We will have Latin American centers, under the guidance of Georgetown, develop a program in which small businesses will become experts in international trade, especially with the United States.

For four years Georgetown has worked closely with NASA to create revolutionary small business development centers in Bogota, Colombia and Quito, Ecuador. Georgetown will also use the ACTS satellite for educational and telemedicine programs in Alaska. NASA has invested tremendously in these programs: funding on the order of $500 million was allotted for the successful installation of the ACTS satellite. Georgetown, also, has raised $47 million from its own resources to develop and operate wide-ranging programs using the ACTS satellite.

We express our thanks for providing funds to the MIF and IDB. We will keep you informed of our development.

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## PREPARED STATEMENT OF RODNEY DE HAN, GROUND WATER MANAGER, FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATIONS

**Mr. Chairman, my name is Rodney DeHan, I am the Ground Water Manager for the Florida Dept. of Environmental Regulations and a Board Member and President of the Ground Water Protection Council (GWPC). This testimony is submitted on behalf of the member states of the Ground Water Protection Council who together have primary enforcement authority for over ninety percent of the approximate one and a half million injection wells in the United States. Last year this Committee provided $10.5 million to the state UIC regulatory agencies for their continued operation and enforcement of the national underground injection control programs and we'd like to thank you for that.**

**The national Underground Injection Control (UIC) program is authorized in provisions of the Safe Drinking Water Act and its Amendments. The administrative and enforcement responsibilities of this program have been delegated to the states for this, the nation's largest and most comprehensive ground water protection program. Injection wells range in nature from very high-tech deep disposal wells which inject hazardous and nonhazardous waste at depths from three to twelve thousand feet underground, to simple dry wells which are used by mom-and-pop service stations, family industries, small businesses, farmers, and municipalities. Also included in the family of injection wells are the approximately 175,000 wells used by the oil and gas industry for salt water disposal and secondary recovery operations. Each year these wells re-inject over a billion barrels of salt water brought to the surface commingled with oil and gas production. Solution mining wells used to recover salt, sulfur and other minerals are the remaining type of injection well.**

As regulatory programs, the Class I, or hazardous waste disposal wells and Class II, salt water disposal wells, and Class III, solution mining wells, are fairly mature. These types of wells have been used by the respective industries for decades and because of the relatively small number and the concurrent high technology being applied to their operation, they pose less risk to ground water than do the well over one million Class V, or shallow injection wells, some of which can be found in every Congressional District of the United States. Yet, these mature programs have worked only because of the state's ability to inspect and monitor their operations. When properly sited and routinely inspected these are among the safest means of liquid waste disposal available. However, the continued future success of this process is in increasing jeopardy if additional funds are not added to the UIC program at the federal level.

With that in mind, I'd like to address the Class II well program first.

Affecting approximately 32 oil producing states is the decline which we are experiencing in the total production and price of oil. It is typical that as oil production declines, the amount of produced salt water increases. Every barrel of oil which is produced may be accompanied by as many as 30 to 40 barrels of salt water. This salt water is extracted from oil bearing strata and brought to the surface along with the oil. It must then be carefully reinjected far below the lower most underground source of drinking water. Failure to inject or improper injection causes severe and lasting damage to the environment and underground drinking water supplies.

With the decline in the price of petroleum and the increase in environmental regulations many oil wells are no longer profitable and have been shut down. This could be an even greater threat to ground water since an inoperative well can still do serious damage to the environment. Under law, well operators have two options. They must either file for temporary abandon mentor plug their wells and furnish the appropriate regulatory agency with evidence that the well has maintained its mechanical integrity. The majority of these wells are not owned by major oil companies. Most are locally owned by small business or are mom and pop operations. Either way, our workload at the state regulatory agencies has dramatically increased and will continue to do so. This is because we try to have a field inspector present to observe mechanical integrity tests concerning operation of a well. In cases of a temporary abandonment, our geologists and engineers must carefully review and either approve or reject the evidence demonstrating the mechanical integrity of a given well.

We have also been affected by increased federal reporting requirements to the EPA and significantly more administrative paperwork not to mention the federal budget crisis. The result has been that while our workload and responsibilities have been substantially increasing, our budget has been decreasing.

A second concern, of equal importance, is related to the Class V, or shallow well program. Shallow wells are of simple construction, compared to the other types, and are in daily use by families and small businesses, farmers, small municipalities, and, unfortunately, also pose a significant risk to the nation's ground water resources. We believe many of these wells, acting as conduits, are allowing the "mainlining" of hazardous wastes commonly found in every day family and manufacturing uses, directly into underground sources of drinking water. The regulatory program for inventorying, inspecting, closing, remediating, and monitoring these wells is new by comparison to the other types of injection wells mentioned previously. As the state regulatory agencies with the responsibility for implementing this regulatory program, we are very concerned because these shallow injection wells may pose the greatest risk of all known point sources for contaminating ground water. We believe that by providing more, and better trained state inspectors and enforcement officers, and more extensive public education and outreach, the general public, who own and operate, and whose own drinking water is affected by these simple shallow wells, will comply with this regulatory program thereby diminishing this substantial risk to local ground water supplies. What the states lack, however, is enough money to do our job to the degree you and we would like. As the front line agencies charged with running this federal ground water protection program, states must have additional resources to hire more inspectors and enforcement officers to find these wells and to work with local city councils, planning commissions, and water agencies, to inform them of the hazards surrounding the use of these wells and suggesting to them best management practices that can be used with these shallow injection wells.

The goal of providing more effective enforcement and subsequently promoting pollution prevention activities comes down to money. The Underground injection Control Program receives $10.5 million for the operation of a program to regulate all four types of wells in every state. The USEPA will propose stricter Class V well regulations, which will add another layer to the already overburdened state agencies who must enforce this federally mandated ground water protection program.

There is a way to enforce this program immediately and to pay for it. If EPA was provided an additional $5 million next year for the specific purpose of providing additional enforcement presence in each state, there would be a positive impact in ground water protection. Congress would have to mandate the specific use of these funds -- to require immediate direct enforcement through each state underground injection control program. Nothing could relieve existing ground water pollution threats more than this clearly defined use of additional funds.

To obtain these pollution prevention funds, Congress might consider shifting money from a pollution clean up) program. Enhancement of the shallow well program and more wellhead protection planning would ultimately result in less money being needed in pollution clean up programs. Proposals to spend more money on these other programs, with no new funding for the enforcement of this pollution prevention program, causes an imbalance in EPA enforcement efforts that was probably unintended by both EPA and Congress. Simply as an example, if funding for the UST program grew more slowly, the UST program would still continue to grow as the financial capacity of small communities expands to allow them to replace damaged tanks. However, if at the same time the communities were to engage in locating and closing shallow injection wells, much of which can be done with local staff and resources already invested, they would be preventing future problems from occurring in the first place.

In short, Congress should consider moving funding (or use funds from cleanup programs) to balance the enforcement efforts for the prevention of the disposal of pollutants into underground sources of drinking water. In addition, this would be 100% available for in-the-field enforcement activities. It is the first step in eliminating them as a source of future pollution.

The level of federal assistance provided to the states for the enforcement of federal UIC regulations has not increased as our federally mandated responsibilities have grown. The federal funding was $10.5 million last year and $10.5 million for the five years before that.

All of the 23 Primacy States have reported current funding shortfalls. The average shortfall for the States was over $350,000. Funding shortfalls have impacted most areas of the Class II program. The areas of field inspections and risk assessment were most commonly impacted. Personnel shortages were mentioned by many states.

For the Class V program, a review of 1994 expenditures indicated that The majority of

**states do not actively regulate all shallow injection well types, but focus only on polluting wells due to the lack of funding. This lack of attention to other high risk well types only serves to hasten the day when they will be a clean-up problem.**

**In closing, we are requesting that the Congress consider an additional $5 million funding in order to provide additional enforcement support for the underground injection control programs in each state. In addition, we would like to request an additional $400,000 to sustain the Ground Water protection Council's highly successful education and training program used by the states which will help them integrate their UIC program and wellhead protection planning into the national ground water protection program. The beneficiaries of this effort are our friends and neighbors who would be more knowledgeable about, and more able to, protect their local ground water supplies through their own efforts.**

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## PREPARED STATEMENT OF THE HEBREW ACADEMY FOR SPECIAL CHILDREN

Mr. Chairman, Members of the Subcommittee, thank you for providing me the opportunity to submit this testimony. I am Bernard M. Kahn, Executive Director of the Hebrew Academy for Special Children, or HASC.

HASC is a non-sectarian organization that works with more than 900 developmentally disabled children and adults daily regardless of race, color, or creed. Since our founding in 1963, HASC has grown to become a renowned educational organization and diagnostic/treatment center meeting the needs of handicapped children and adults from New York, Maryland, Pennsylvania, Ohio, Michigan, Massachusetts, Florida, Tennessee, Wisconsin, Illinois, Colorado, California, Mexico, and Canada. These children and adults have come to HASC through referrals and news accounts only, as we do not advertise our services.

HASC was founded originally to provide educational and therapeutic services to developmentally disabled, orthopedically impaired, multiply handicapped, autistic, and language impaired children who were not served within the New York City public school system. HASC has since provided thousands of disabled children with special education and related services including speech and language therapy, occupational therapy, and physical therapy.

In addition, HASC provides health services monitoring and parent education services through its consultant neurologists, pediatricians, audiologists, otolaryngologists, opthamologists dentists, orthopedists, and full-time registered nurses. Since its inception, HASC has grown into a multi-service school with programs for special infants, toddlers, at-risk pre-school children, handicapped pre-school children, and special school-age children, and adults.

The goal of the Hebrew Academy for Special Children is to provide state-of-the-art special education program to meet the needs of handicapped children and adults. Its purpose is to maximize the potential of each special individual to live in the community to the best of his/her ability.

To that end, HASC is committed to the education of all handicapped children in the least restrictive environment in their community. HASC is committed to the education of pre-school disabled and at-risk children with the firm belief that special education, to be maximally effective, must begin early with the recommended habilitative measures.

HASC is currently providing comprehensive evaluations, special education services, therapeutic services and consultations to our The more than 900 children and adult students at nine different locations in New York State. HASC is presently serving handicapped students in special 10- and 12-month schools, summer school, pre-school, adult sheltered workshops, and adult residence facilities.

The HASC Special Education Programs are comprised of several components. They include:

- An infant and toddler program for handicapped and at-risk babies (ages: 0-2 years);
- A pre-school special education program serving youngsters (ages: 3-5 years);
- A special education school program for youths (ages: 5-21 years); and
- Job training and employment programs for adults involving assembly and packaging operations for private industry.

In addition, HASC has been serving the community with a residential facility for adults for more than two decades.

These components are further subdivided into full- and part-time programs for the pre-school populations; a 10-month program and a 12-month program for the pre-school and school-age children. For example, some children who exhibit speech and language delay may be mainstreamed within regular programs for pre-school children in community-based nursery schools, and receive speech and language therapy and habilitation at the HASC pre-school program part-time only. Ten months or 12 months of programming for handicapped children is contingent upon level of functioning, severity of the handicaps, and requirement of the therapeutic regiment.

The children at HASC exhibit a whole spectrum of language and community needs. Many come from homes in which English is not spoken; some come from bilingual but limited English proficiency homes. The special educators and therapists at HASC must be knowledgeable about many different linguistic-cultural backgrounds such as French-Creole, Hispanic, Russian, Yiddish, and Hebrew.

A number of children are pre-verbal or non-verbal, and are trained in alternate methods of communication such as total communication and sign-language. Others are trained via communication boards, special computers, and augmentative communication devices.

In addition to the specific language needs, many children at HASC exhibit severe emotional needs. Many come from single parent families, others from foster homes, and a sizable number come from group homes. Many of the families are dysfunctional and experience severe stress as a result of unemployment, poor health, marital strife, substance abuse, lack of adequate education, and poor knowledge of satisfactory child-rearing practices.

Many of the parents require intensive parent counseling and education in handling and rearing a special child, basic hygiene and health practices, behavior management techniques, positive reinforcement techniques, and advocacy. Many are unaware of services offered to special children and their families, and many are not familiar with education curricula, cultural expectations and general conventions.

The therapeutic needs of the children range from speech and language therapy, audiological and hearing services, psychological services, therapy and counseling, physical therapy, occupational therapy, adaptive physical education, music and movement therapy, critical health monitoring, therapeutic and special diets, and medical follow-up.

At HASC, we are passionate about improving the lives of handicapped children and adults from across the United States, and we are proud of the results we achieve.

The HASC concept of providing total management of all facets of the handicapped student's life has been met with tremendous success. By addressing daily living skills as well as basic educational needs, HASC has been able to improve its students' and their families' quality of life. By involving the parents in the socialization of their disabled children, the program has been able to strengthen the family unit where it was once torn apart by the stresses and stigmas involved with having a handicapped child.

Although this is an area that has received little attention in other programs, HASC's comprehensive, family-oriented approach has served to bolster the benefits of the overall educational objectives of HASC's program. Because of this unique approach to special education for the handicapped, HASC's students are better able to fully develop their potential. Time and again, HASC has provided services which have led to overwhelming advances in meeting physical, emotional, and social needs.

A parent writes:

> "Nicole and I were both a mess when I first came to (HASC). I still can't believe the pleasant, loveable, little person she's turned into. You've each put so much of yourselves into her, and she loves you all... It's been a long, rough five years, and I know I have many more rough years ahead, but I'm glad we had HASC in the beginning. (HASC) was her foundation, and I think it was the best she could have had."

Another parent writes:

> "I remembered, just as if it were yesterday when I took James to your school and the warm atmosphere that greeted me. James could only be understood by me or close relatives. Now he is communicating on the telephone. Thank God, through the help of the school he is graduating."

A parent from Connecticut writes:

> "This year, our dream came true, and Dina was able to attend HASC. (At HASC) the caring and love for these children is genuine. The care has been as fine as the care parents provide. I am truly awed by the fact that HASC is indeed able to care for all these special children. Some of these children are medically fragile and really need individualized special care. Dina is one of these children and I am confident to say that all her needs are met. HASC not only provided physical care but also provided all her necessary therapies. Dina received special education, physical therapy, occupational therapy, and speech and language therapy. Just scheduling all these therapies must have been an awesome task."

A parent from Ohio writes:

> "We are writing to express our deep appreciation and unending gratefulness to you for all the love, care, and devotion you have showered on our son. As parents of a special child, our unconditional love comes naturally, but it is all the more special when it comes from others who can appreciate him as much as we do."
>
> By sending our son to HASC, he is benefiting in so many ways. He is able to be with other special needs kids. This gives him a tremendous sense of self-worth that he misses out on because of being mainstreamed. The curriculum is tailor made (for him)."

Outcomes such as these are a result of commitment, dedication, and caring. HASC's body of knowledge has been developed and analyzed continuously over the last 30 years. Experience such as this is important as other organizations across the country struggle to meet the needs of the handicapped in their communities.

During the past three decades HASC has acquired the knowledge and expertise to assist other schools and agencies interested in developing educational facilities for special children and adults. The rapid growth in educational and therapeutic programs, and the range and breadth of many of the programs have engendered an atmosphere of excitement, growth, and, above all, a sense of mission and a firm belief in the right and ability of every handicapped child and adult to develop to his or her full potential.

HASC recognizes that its past experience and current programs enables it to improve the lives of many more handicapped people across the nation. Further, HASC could assist other nonprofit organizations across the nation develop similar programs by providing these organizations with access to our expertise. However, HASC is greatly inhibited by a lack of physical space and program dollars.

Therefore, in response to the needs of America's handicapped population, the Hebrew Academy for Special Children is seeking to build a partnership with the Federal government to support the purchase and renovation of a property so that HASC can expand its mission by reaching more developmentally disabled children.

Specifically, HASC will expand one of its nine sites (known as the Gan Ezra school) which since its opening in March 1992, the great demand for services has surpassed physical capacity. Currently, there is a waiting list of more than 100 children to attend this facility.

A large portion of HASC's budget currently is "eaten up" by the rental expense of our existing facility. Thus, to relieve the budget strain imposed upon the programs, enable expansion, ensure the proper management of the state-of-the-art programs described in my testimony, and enable our professionals to help other organizations develop similar programs, HASC is seeking assistance in acquiring a facility we have already identified.

We at HASC are extremely cognizant of the fiscal constraints under which this Subcommittee, and the entire Congress, are working this year. At the same time, our early intervention programs save the local, state and federal government in special education costs every year. With greater physical capacity, we can help mainstream even more children and adults to become productive, self-sufficient taxpayers, not just tax recipients.

Thus, HASC is a sound investment for the federal government.

The total funding needed to expand HASC's facilities and programs is approximately $5 million. Mr. Chairman, since HASC is a true public-private partnership, we are seeking a federal investment of $2.2 million in FY '97. HASC will meet its additional budget needs by actively raising significant private dollars and through state government sources.

Mr. Chairman, and Members of the Subcommittee, thank you for the opportunity to provide you with this testimony.

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## PREPARED STATEMENT OF THE CITY OF GAINESVILLE, FL

Mr Chairman:

On behalf of the City of Gainesville, Florida I appreciate the opportunity to present this written testimony to you today. The City of Gainesville is seeking federal funds in the FY 1997

VA-HUD Appropriations bill, in order to assist our efforts to protect the Florida aquifer from stormwater runoff. In particular, we are hopeful that the Subcommittee will provide the City with $2 million as an EPA Special Assistance Grant.

In Gainesville, the Sweetwater Branch basin contains approximately 1,710 acres and is located in the southeast central portion of the City. The outfall from this basin discharges into Paynes Prairie, a state owned preserve and park system, which eventually flows into the Alachua Sink, a natural sink hole that drains directly into the Florida aquifer. This aquifer provides the majority of drinking water to Florida's residents and has a direct impact on the Florida Everglades.

The Sweetwater Branch drainage basin contains urban, commercial, industrial, and residential area stormwater runoff. Because the branch runs through some of the oldest portions of Gainesville, most stormwater runoff is directly discharged into the Branch with very little flooding or pollution removal treatment. This situation has created a concern among environmentalists, business leaders, and concerned citizens throughout the region that Paynes Prairie and the Florida aquifer are being compromised.

With this in mind, the City has held discussions with State officials, as well as concerned citizens within Gainesville, to devise a project that would alleviate this problem. This project's goal is to reduce or eliminate the sediments, debris, nutrients and general pollutants currently being discharged into Paynes Prairie and eventually the Florida aquifer. Current projections are that the project would consist of the following three components:

- the purchase of undeveloped property in the vicinity of State Road 331 and Sweetwater Branch;
- the construction of maintainable sediment and debris removal systems; and
- the construction of maintainable nutrient removal systems.

An in-depth engineering analysis of the creek system, property topography, associated wetlands, and other pertinent factors is needed to determine the optimum and appropriate scope of property purchase and facilities construction. The City is prepared to pay some of the cost for this analysis, but we are simply unable to bear the entire burden. As a result, we request that the Subcommittee appropriate $2 million as an EPA Special Assistance Grant to assist our efforts. Once the project construction is complete, Gainesville Stormwater Management Utility, a public utility, would provide the required annual maintenance for the facility and no federal maintenance funds would be needed.

This is a critical and much needed project for the City of Gainesville, as well as the entire State of Florida, and we respectfully ask the Subcommittee for its consideration of the Sweetwater Branch/Paynes Prairie Stormwater Project.

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## PREPARED STATEMENT OF THE LOCAL INITIATIVES SUPPORT CORP.

The Local Initiatives Support Corporation (LISC) is pleased to submit this statement regarding FY 1997 HUD Appropriations for the U.S. Department of Housing and Urban Development (HUD). We would like to discuss very promising but little known phenomenon that is taking hold in low-income communities across the United States today -- the community development corporation (CDC) -- and what it says about the proper role of HUD and two specific HUD programs -- HOME and CDBG -- in helping low-income communities to rebuild.

We describe LISC in greater detail below, but briefly, LISC is a non-profit conduit through which the private sector provides financing and technical support to CDCs in 35 local programs, a list of which is attached, serving over 100 cities and urban counties. In 16 years, we have raised over $2 billion, 97 percent of which has come from 1,400 corporations and foundations. We have used these funds to help 1,400 CDCs develop over 64,890 housing units and 9.6 million square feet of retail, industrial and other commercial facilities.

There is little doubt that the problems besetting low-income urban and suburban neighborhoods and rural areas are serious and impede both individual opportunity, regional stability, and the national interest. We know that community distress reflects the interplay between social, economic, and physical deterioration. And we also know that the private sector, government at all levels, and most important, the residents of these low-income communities must share the responsibility for turning decaying neighborhoods around.

## About Community Development Corporations

CDCs are showing that community renewal is achievable. As of the end of 1993, about 2,200 CDCs nationwide had developed about 400,000 units of housing serving well over one million people, as well as numerous economic development projects and community facilities. Equally important, CDCs have brought residents together with the private sector and government to create a new sense of hope for neighborhoods that the popular press and most other outsiders write off as irretrievable.

CDCs succeed in so many diverse places because they embrace mainstream American values. Because these values transcend ideology, CDCs have been able to generate broad participation and are an attractive instrument of public policy. We believe CDCs have been ahead of many of the emerging changes in federal policy.

- **Self Help**: CDCs are vehicles that community residents create to take responsibility for improving their neighborhoods and enforcing pro-social behavior.

- **Community Building**: CDCs bring people together, reinforce the social fabric, and bolster community institutions from churches to little leagues. Their mission to rebuild communities physically, economically and socially transcends housing or any other single issue.

- **Local Control**: CDCs bring decision making down to the neighborhood level, where it is closest to the people. CDCs work well with city and state officials.

- **Partnership**: CDCs are pragmatic and collaborative, not confrontational. They recognize that no single organization can revive a neighborhood alone. CDCs, government, and the private sector -- lenders, investors, property owners, developers, businesses, foundations, and others -- all contribute to and benefit from community development activities.

- **Investment**: The only long-term, sustainable way to revive low-income communities is through investment, private as well as public. A principal function of public investment is to stimulate private investment, create healthy, functioning markets, and to connect isolated, distressed communities to the economic mainstream.

- **Tangible Results**: This is perhaps the most important and distinguishing characteristic of CDCs. The visible results of community development, such as housing and retail development, are verifiable proof that community development works. Less tangible outcomes -- greater community cohesiveness, new relationships with public and private institutions, stronger community leadership, and a new sense of hope and progress -- are undeniably important, but it is CDCs' tangible results that set them apart from many other efforts and impart credibility to claims of less visible outcomes.

## How LISC Helps CDCs

LISC was created by six corporations and the Ford Foundation 16 years ago as a nonprofit organization to enable the private sector to assist CDCs in their efforts to transform distressed neighborhoods into healthy communities. LISC operates with the convictions that: community regeneration must come from within the community itself; that government at all levels, the private sector, and community residents all have critical roles to play and must work together as active partners; and that CDCs are the most effective agents for fighting poverty in the most distressed communities in the United States.

Our first name is "Local." We are a constellation of 35 local programs nationwide, and have become the nation's largest private, nonprofit community development intermediary. Funds raised locally are matched by national LISC on a formula basis. Each LISC program is served by local staff and governed by a local advisory committee which recommends CDC projects for funding to LISC's national Board of Directors. In addition, on November 1, 1995, we announced a new Rural LISC program to invest $300 million through 68 rural CDCs nationwide.

We believe that engaging the private sector is essential to the community development process. Private involvement is not a substitute for governmental funding, and public funds are necessary to make private investment feasible. But community development requires that isolated neighborhoods join the economic mainstream; public funds alone will always be insufficient unless they stimulate private investment; the rigor of business discipline is fundamental to effective project development; and business leaders' endorsement increases the stature of CDCs. Not only is the active involvement of the private sector necessary to community development, but business leaders genuinely want to participate. It is our job -- and, we would assert the government's job as well -- to create opportunities for them to do so.

Our primary focus has been to build the financial and technical capacity of CDCs to sponsor housing and commercial development projects. We provide technical assistance and project financing to CDCs: grants, loans, recoverable grants, equity investments and loan guarantees for project development, operating support, and up-front predevelopment costs. LISC's support is often the first money committed to a project, helping to leverage additional private and public resources and adding credibility to the project. Equally important, we seek to strengthen emerging CDCs and create new organizations and leadership.

Since its inception, LISC has:

- Raised $2 billion in grants, loans and equity investments from more than 1,400 corporations, foundations, individuals and public agencies.
- Enabled CDCs to use these funds to leverage an additional $2.9 billion in project financing.
- Helped 1,400 CDCs nationwide build or rehabilitate over 64,000 homes and apartments and create 9.6 million square feet of commercial and industrial space.

- Identified, elevated, and nurtured indigenous leadership in distressed urban and rural communities.

To support local community development activities, LISC has created new mechanisms to attract new resources at the national level.

For example:

- In 1987, LISC formed the National Equity Fund (NEF) to syndicate corporate investments in CDC-sponsored low-income rental housing via the federal Low Income Housing Tax Credit. NEF is the nation's largest nonprofit affordable housing investment program. It has raised over $1.5 billion from Fortune 500 corporations, helping CDCs to create more than 25,000 homes for individuals and families across America.

- In 1993, LISC formed The Retail Initiative (TRI), a corporate equity investment fund to help CDCs develop supermarket-anchored neighborhood retail shopping centers. In August 1994, the TRI 1994 Limited Partnership was capitalized with of $24 million for an unprecedented initial investment pool. In 1995, TRI approved its first two investments: the first in a Pathmark Store on 125th Street in Harlem and the second in a supermarket/drug store project in North Philadelphia. We expect to invest in 10 - 12 projects over the next three years.

- We established the Local Initiatives Managed Assets Corporation (LIMAC) in 1986 to attract new capital for community development by creating a secondary market for affordable housing and community development loans made by nonprofit Community Development Financial Institutions. LIMAC purchases these loans and sells securities backed by the loans to institutional investors such as banks and religious pensions funds. LIMAC has purchased or committed to purchase over $100 million of these loans to date. We believe that LIMAC can play an important role in expanding resources for CDFIs.

- LISC helped to conceive the National Community Development Initiative (NCDI), under which seven private foundations and Prudential Insurance Company provided $62.5 million in grants and loans to assist CDCs in developing 4,400 affordable new homes. LISC and the Enterprise Foundation administer the funds. NCDI is now in its second three year phase. In 1993 the Congress authorized and appropriated $20 million for HUD to contribute for this second phase. The modest federal participation has attracted $67.65 million in grants and low-interest loans from 10 national foundations and corporations as match for the federal funds. LISC and Enterprise will pass every federal grant dollar through to CDCs, primarily for capacity building activities. Over the course of the program, over 8100 units of affordable housing have been made possible by this partnership. We expect these nationally raised funds to generate at least another $660 million in project financing, a remarkably effective use of federal funds. In 1996, another $10 million NCDI participation was approved as part of the HUD Extender Bill. We expect this HUD participation to attract even higher levels of private sector participation in the NCDI program.

LISC is also in the process of expanding the scope of its activities to include rural community development, social community development, and a wider range of economic development activities, all through CDCs.

Although the bulk of LISC's funding is private, public funds -- especially HOME and CDBG -- are crucial to the projects CDCs undertake with our assistance. In addition, a small share of LISC's funding does come from government. Between 1979 and 1995, $1.525 billion

(97.5%) came from private sources; $23.3 million (1.5 %) from federal sources; and $14.9 million (1%) from state and local government. LISC passes on most of the government money it receives to CDCs.

## HUD's Role

With all the negative press about HUD, it is crucial to identify and support the programs that do work effectively to serve low-income people and communities. We believe that, in general, the most successful federal programs are flexible, responsive to local needs, and foster true public/private/community collaboration.

Two HUD programs that work especially well are the HOME Investment Partnerships Program (HOME) and the Community Development Block Grant (CDBG). They are models for effective federal policy and offer a road map for restructuring other HUD programs. Both are flexible but focused block grants administered by states and localities. Both provide the gap financing necessary to attract private loans and investments to projects. Both are extensively used by CDCs and are indispensable to continued progress in rebuilding communities. Both have enjoyed strong bipartisan support.

**HOME**. HOME has rapidly become HUD's most important tool for producing affordable housing and an indispensable resource for nonprofit and for-profit sponsors and state and local governments. We support the President's request of $1.55 billion for HOME in FY 1997.

The National Housing Task Force, convened in 1987, conceived what in 1990 became the HOME program as the centerpiece for the Cranston-Gonzalez National Affordable Housing Act. The task force, convened by Senators Cranston and D'Amato and ably chaired by Jim Rouse and David Maxwell and the Congress intended HOME to be a flexible resource to strengthen state and local housing production systems, in stark contrast to previous federally driven approaches, and to engage CDCs and private developers, investors, and lenders as active partners in the process. As sometimes happens, however, numerous compromises required to secure enactment severely hindered the program in its early days. Critical changes were made in late 1992 to make the program work as originally envisioned. Additional refinements were also enacted in 1994.

Since 1993, when regulations implementing the program were issued, HOME has taken hold much as we had hoped. States and localities have been spending funds expeditiously. HOME has already assisted a total of 167,000 housing units at an average cost of $16,273 in HOME funds. In addition, roughly 21,000 families are receiving HOME tenant-based rental assistance. Each dollar of HOME has attracted an additional $1.78 of other funds. We are involved with numerous HOME-funded projects, many of which are already completed and occupied.

We are especially pleased by the way HOME is helping to forge new local partnerships with CDCs. We strongly support the 15 percent set-aside of HOME funds in each state and locality for nonprofit Community Housing Development Organizations (CHDOs), whose definition accommodates the vast majority of CDCs. In addition, the 1992 amendments permit states and localities to use up to 5 percent of their HOME funds to support the operational expenses of CHDOs. These provisions have sparked new and greater opportunities for CDCs. Where CDCs and state and local governments already had good relationships, HOME has strengthened and deepened those relationships. Elsewhere, HOME has brought CDCs and state and local governments together for the first time.

**CDBG**: The Community Development Block Grant program has for many years been a critical resource for CDCs and low-income communities generally. While HOME has focused primarily on housing production, CDBG is used for a broader range of activities critical to low-income areas, including economic development, community facilities such as health clinics, day care centers, and youth recreation centers, infrastructure, and certain public services. Numerous

CDCs use CDBG for a wide range of activities. Recent regulatory changes have greatly streamlined the use of CDBG for economic development. The vast majority of funds benefit low-income people and areas. We strongly support FY 1997 appropriations for CDBG of at least $4.9 billion, the amount requested by President Clinton.

This concludes LISC's statement.

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## PREPARED STATEMENT OF GARY A. GLENN, PRESIDENT, MASSACHUSETTS FOUNDATION FOR EXCELLENCE IN MARINE AND POLYMER SCIENCES

I am proud to submit this testimony on behalf of communities in Vermont, Maryland, California, Massachusetts, and other states that are involved in testing a low cost, ecological technology for reviving and reusing wastewater. The communities are putting their own hard pressed resources into this cost effective technology, and are pleased that Congress has provided funds to EPA to assist in the project. The data from the locations where the new technology is being tested in accordance with EPA guidelines, will provide the best conceivable basis for determining the extent to which this technology can be adopted by communities across the country. The different locations represent varied geographical conditions so that the results will represent a true cross section of the United States. In order to complete testing at the demonstration projects already begun, and to provide for assembly and testing of a mobile demonstration ecological unit, we request $2.0 million for FY 1997.

This project fits very well into the ideas and concepts supported by this Congress. This technology is intended to be community-based and community-specific, as opposed to being centrally mandated. Each and every local community in the United States will be able to select from a menu of wastewater treatment options, and can weigh cost factors, speed of clean-up, size of facility, and water reuse alternatives. Thus local communities (as well as counties and states) will have expanded freedom in deciding upon wastewater treatments.

Second, the role of the federal government in this project is very limited, very specific, and very short term. The primary reason for federal government involvement is to enable coordination and to provide the structural framework for the collection of data on the operation of each system so that local communities will have the data necessary for decision making. Once this data has been collected over a period of time sufficient to demonstrate the technology's effectiveness and cost, no further federal funds will be necessary for demonstrating the system.

Third, it is intended that operation of advanced ecologically engineered systems will be less expensive for treatment of wastewater than other kinds of technologies. This will save taxpayer dollars at the federal, state, and local levels.

The purpose of advanced ecological engineering systems is to treat wastewater and its by-products by using natural processes of sunlight, plants, and animals in a carefully balanced ecosystem. Untreated or inadequately treated sewage, septage and sludge have become one of the world's most pressing problems, causing the contamination of drinking water supplies and coastal marine waters. This is a particularly acute problem in the U.S. because of our high rate of consumption and multiple use pressures on our water systems. Public support for environmental conservation and reuse of resources continues, but new methods for dealing with the protection of our waters are needed.

The ecologically engineered system that has been developed by Dr. John Todd and his associated scientists and engineers removes both nutrients and toxic substances from polluted water by channeling it through a series of cylindrical tanks or raceways placed in rows inside a greenhouse. The tanks are exposed to sunlight and contain a carefully designed progression of bacteria, algae, snails and fish. Wastewater is pumped into the first tanks where microscopic bacteria attack or consume organic matter, thus causing their populations to grow. Algae thrive on the nutrients released by the bacteria, and they increase Snails consume the algae, and the cycle goes on, all the while transforming the wastewater. Further on, different varieties of plants are grown on the surface of the water, allowing their oxygen-rich roots to fall beneath the surface where snails and higher organisms graze. In the last tanks fish such as tilapia and bass swim around in clean water. By imitating the way nature purifies water, only more quickly and thoroughly, this system represents a dramatic departure from conventional methods.

This ecological wastewater system is truly effective - not only because it uses new and unexpected ways of treating wastewater, but also because it asks all of us as citizens to think about what "waste" means. The traditional method of dealing with vast quantities of wastewater produced by our homes and businesses has been to add chemicals to kill the potentially toxic organisms and to neutralize the toxic inorganic chemicals. Conversely, the principle behind ecological engineering is deceptively simple: let nature take care of breaking down the toxins in wastewater in its own way, that is, with natural organisms including microbial life forms, plants, and animals. In practice, the engineering of a dedicated living ecosystem containing hundreds or thousands of organisms is phenomenally complex. It is only because of scientific breakthroughs in microbiology, plant science and pathology, biotechnology, and ecology/environmental science that have occurred in recent years that this kind of system engineering is now possible.

The Massachusetts Foundation for Excellence in Marine and Polymer Sciences is acting as the coordinator for the various locations where this nature-based technology is being tested. We collect data from all locations, prepare comparative reports, and interact with EPA on matters of consortium interest. On behalf of the participating local and state entities, we request the support of this committee in providing continuation funding from EPA so that we can maintain operations, testing, and facility assembly at demonstration sites at participating locations in Vermont, Massachusetts, California, and in other states.

# PREPARED STATEMENT OF THOMAS S. FULLER, PRESIDENT, METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

I am Thomas S. Fuller, President of the Metropolitan Water Reclamation District of Greater Chicago, and on behalf of the Water Reclamation District, I want to thank the Subcommittee for this opportunity to present our priority for fiscal year 1997, and express our appreciation for your support of our requests over the years. The Metropolitan Water Reclamation District (MWRD) is the sponsor for the federally approved combined sewer overflow (CSO) elimination project, the Tunnel and Reservoir Plan (TARP), in Chicago, Illinois. Specifically, we are asking that $25 million be included to continue construction of this project in the Subcommittee's VA, HUD and Independent Agencies Appropriation's bill for FY 1997. The following outlines the project and the need for the requested funding.

## INTRODUCTION

The Metropolitan Water Reclamation District was established in 1889 and has the responsibility for sewage treatment, flood control and stormwater management in Cook County, Illinois. In fact, the District was established, in response to an epidemic which had killed 90,000 people in 1885, for the purpose of addressing the local sewage problems, and by 1900, had reversed the flows of the Chicago and Calumet Rivers to carry combined sewage away from Lake Michigan, the area's main source of water supply. The District has been involved with major engineering feats since its inception.

In an effort to meet the water quality goals of the Clean Water Act, to prevent backflows into Lake Michigan, and to provide an outlet for flood waters, the Metropolitan Water Reclamation District of Greater Chicago designed the innovative two-phase Tunnel and Reservoir Plan. TARP Phase I, which was judged by the EPA on two occasions as the most cost-effective plan available to meet the enforceable provisions of the Clean Water Act, is a combined sewer overflow elimination system. TARP Phase II, also under construction, will provide flood control relief to hundreds of thousands of residents and businesses in the Chicagoland area.

## TUNNEL AND RESERVOIR PLAN

TARP Phase I is an extensive system of drop shafts, tunnels and pumping stations which will capture combined sewer overflows from a service area of 375 square miles, containing 13,500 miles of sewers and serving 3.6 million people. Of the 109 miles of tunnels comprising TARP Phase I, 75.4 miles are already operational, 18 miles are under construction.

The Mainstream system is the largest tunnel segment and consists of 40.5 miles of tunnels, 13 to 33 feet in diameter and 240 to 300 feet below ground. In 1985, 31.2 miles of tunnels in the Mainstream System were completed and placed in operation.

This innovative pollution control project was constructed utilizing USEPA Clean Water Act funding through the Construction Grants Program. I am pleased to point out that this ambitious undertaking was completed on schedule and under budget. We believe this accomplishment is extraordinary, considering the scale and the engineering complexity involved in the plan. Our progress to date has continued this scheduling and budgeting success story.

This is to advise the Subcommittee of the proven effectiveness of this plan, which truly serves as a model of federal dollars well-spent. On October 18, 1985, the first operational filling of the tunnel occurred. This happened when a 12-hour rainfall generated 3 inches of rain in the Chicago metropolitan area. A rainfall of this magnitude normally causes health-threatening water pollution and backflows of raw sewage and polluted water into Lake Michigan, the source of the area's drinking water. In the past, these backflows had occurred several times a year. As the direct result of the Mainstream Tunnel System, however, over 1 billion gallons of storage volume was made available by TARP, which prevents that quantity of combined raw sewage from being discharged into the Chicago waterways. This capacity also prevented the direct release of 85 million gallons of combined sewage into Lake Michigan. As an additional benefit to pollution control, basement flooding in the areas immediately adjacent to the 31.2 mile TARP Mainstream Tunnel was virtually non-existent.

On November 2, 1985, a 30-hour rainstorm filled the tunnel for the second time, and on November 19, 1985, the tunnel was filled for the third time as a result of another heavy rain, thus once again preventing the exposure of citizens of the Chicagoland area to a possible health risk. Since it has been placed in operation, the Mainstream TARP Pumping Station, alone, has pumped over 330 billion gallons of captured combined sewage for complete treatment. During treatment of this polluted water, over 300,000 tons of sewage solids were removed and safely disposed of.

The Water Reclamation District is also proud of the contribution this plan has made to the health and the environment of the adjoining Great Lakes states and to our neighbors to the north in Canada. By preventing these pollutant-laden backflows into Lake Michigan, this plan has proven to the region and to the nation that we are serious about improving the quality of our international waters for generations to come. We are convinced that continuing federal involvement in the CSO problem in our area is necessary to protect the investment already made through the Construction Grants program. What has been rewarding to us and our citizens is the protection of Lake Michigan and the return of fish life to our Illinois waterways. As a result of TARP, we are pleased to report that our waterways are experiencing dramatic improvements in water quality, including marked increases in abundance of fish and the number of fish species. TARP stands as an example to the nation that environmentally-wise and cost-effective solutions need not be mutually exclusive.

The funded portion of TARP has eliminated 86% of the combined sewage pollution in a 325 square mile area, and has allowed us to meet the EPA's requirements under the Clean Water Act. However, because the funding authority for the Construction Grants program elapsed several years ago, and the State Revolving Fund program is under financed and its funding is already committed for the out-years in our area, our program cannot continue on schedule and we are in jeopardy of losing the demonstrated water quality benefits we have worked so hard to achieve. Further, we are currently facing serious potential health and safety problems at O'Hare Airport due to flooding and pollution problems. The airport is subject to delays, including curtailed operations during storm events.

To date, while we have completed and/or have under construction approximately 93 miles of tunnel, we still have about 16 miles of tunnels to complete. Although we have been working closely with the state and we have contributed and will continue to contribute local dollars, the scope of the program which protects millions of people is simply beyond the capability of local resources to address. We believe that the federal government has made a commitment to assist in the clean-up of our waterways and that is why we need a solid, continued federal involvement to complete the job. We want to finish this project.

The reason we need to expedite the project at this time is that, during the frequent rainstorms in the Chicago area, the lack of CSO impoundment and treatment is causing the rainwater and combined sewer overflows to inundate the area. O'Hare Airport, a major transportation hub, suffers reductions in airport operations, delays and safety problems. Air pollution problems are experienced. Airplane deicing materials are left to pond on airport grounds since these materials, due to their nature, cannot be discharged into the waterways. Completion of the North Leg of the Des Plaines System of TARP is germane to the traffic and pollution problems at O'Hare Field and will protect 3,300 homes from raw sewage backup flooding.

Due to the enormous risk to the community, the Water Reclamation District, as the local sponsor, cannot afford to leave the citizens vulnerable. Therefore, it is imperative that this work must continue. Because the construction industry is already doing work in the area, the climate is favorable for proceeding with this work at this time, producing a significant cost savings. What we are seeking, then, is funding to advance federal work.

We have a proven and cost-effective program. In fact, we have estimated that TARP's cost is about a quarter of the cost of separating the area's existing combined sewer systems into separate sewage and stormwater systems. Upon reanalysis, the EPA has consistently found the TARP program to be the most cost-effective solution that will reduce the impacts by the greatest degree to meet the enforceable requirements of the Act, with the least amount of dollars. The project, while relating most specifically to the 52 tributary municipalities in northeastern Illinois, is also beneficial to our downstream communities such as Joliet and Peoria.

These benefits occur because of the capture of wastewater in the tunnels during storm periods and by treatment of the discharge before being released into the waterways.

TARP was designed to give the Chicago metropolitan area the optimal environmental protection that could possibly be provided. More importantly, no other project was found to be as cost-effective. In addition, the beneficial use of the project is being enhanced by the addition of the flood control reservoirs now being designed and constructed by the Corps of Engineers, which will be connected to the tunnels for additional capture and storage of combined sewage during flood events. We believe TARP stands as a tribute to our nation's Clean Water goals and one that is being accomplished within the most economical constraints.

## REQUESTED ACTION

The $25 million we are seeking in fiscal year 1997 funding in the Subcommittee's bill will make it possible to proceed with the construction of the final 9-mile stretch of the Des Plaines River System of the TARP project. We greatly appreciate the Subcommittee's endorsement of our request over the years to advance the construction of this work. This FY 1997 work will go a long way to address serious water quality, stormwater and safety problems. It will have a beneficial impact on the operations at O'Hare Airport, where significant delays are encountered. The facilities plan for the overall TARP project has been approved by the EPA and design has been completed. The EPA has identified this particular segment of work as the next critical section of the plan to be constructed based on significant water quality benefits.

Once on-line, the North Leg of the Des Plaines River System will capture 1.9 billion gallons of CSOs per year, will protect 3,300 homes from raw sewage backup and flooding and will rejuvenate the Des Plaines River for habitat and full recreation use.

We urgently request that this funding be included in the Subcommittee's bill for the construction of the Des Plaines River System of the TARP project. We thank you, in advance, for your consideration of our request.

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# PREPARED STATEMENT OF THE MICKEY LELAND NATIONAL URBAN AIR TOXICS RESEARCH CENTER

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| Legislative Authorization: | Clean Air Act Amendments of 1990 (Title III, Sec. 301) |
| Mission: | Study the health effects of the 189 air toxics designated in the Clean Air Act, via sound, peer-reviewed health and environmental research designed to address regulatory needs |
| Current Funding: | $500,000 via EPA FY'96 Assistance Grant<br>(not yet received from EPA) |
| Current Request: | $1.34M via EPA in FY'97<br>(additional private sector and philanthropic funding anticipated) |
| Research Projects: | Use of new methods/technologies for the assessment of air toxic exposures in urban populations and population subgroups<br>Application of biomarker technologies to determinations of human health effects of air toxics in urban atmospheres<br>Initial feasibility studies on health research involving air toxic metals and airborne particulate matter |

Development of a major scientific symposium on air toxics-related acute health effects in human respiratory and immune systems

Mr. Chairman, and Members of the Subcommittee, thank you for the opportunity to provide this written testimony on behalf of the Mickey Leland National Urban Air Toxics Research Center (NUATRC). My name is Dr. Raymond J. Campion, and I am the President of the Leland Center.

The Leland Center was established under Title III, Section 301 of the Clean Air Act Amendments of 1990 as a non-profit, public/private research entity, with the expectation that the Center would help develop new multidisciplinary scientific approaches to assess the potential public health risks resulting from exposure to air toxics, and to provide sound scientific data useful in prioritizing these risks. In brief, the Law mandates installation of Maximum Achievable Control Technology (MACT) on major industrial sources of the 189 compounds listed in the Act as air toxics or hazardous air pollutants. EPA must then assess, over a 8-9 year time frame, the residual health risks still present to the American public from these materials.

The Mickey Leland National Urban Air Toxics Research Center (the "Leland Center") has been operational for more than three years, having received an initial EPA assistance award in February, 1993. Private sector funding has also been received, primarily from national industrial firms over a similar period. These monies have allowed the Leland Center to develop a small staff, utilizing an administrative service agreement with The University of Texas Houston-Health Science Center. This arrangement allows the Center to take advantage of the scientific synergies created by this relationship with The University of Texas and the Texas Medical Center, as directed in the authorization language. The Leland Center began its research program in 1993 with a contractual assessment of the possible impact of air toxics in urban atmospheres on asthma. The Center sponsored a nationally-attended workshop on the potential effects of air toxics on asthma in early 1994. The results of this work have been published and have received a positive reception in the scientific community, including EPA leadership.

In our testimony, we will address the strategic research direction being pursued by the Center, in order to meet our Congressional charge in a cost-effective and scientifically-sound manner. We have defined several "niche" research areas in which the Center is involved. As a small and relatively new entity, we believe it is important to concentrate our limited resources in research areas that provide the greatest potential payout in terms of environmental and public health advances. These "niche" areas of concentration are:

- personal exposure assessment
- application of biomarker technology
- characterization of acute health effects, primarily associated with the respiratory and immune systems

## Personal Exposure Assessment

Our primary research direction at this time is air toxic personal exposure assessment --- to what degree are people, especially those living in urban areas, exposed to the 189 air toxics listed in the Clean Air Act. To date, EPA and state regulators have relied on toxic release inventories from major industrial point sources and ambient air monitoring data to model and predict health hazards. The major disadvantages of this approach are two-fold: 1) point sources represent one of a number of air toxics source categories, others being area and mobile sources, which are not always included in these modeling scenarios, and 2) people do not spend the bulk of their time outdoors in the monitored areas. Indoor air toxic exposures must be included in order to arrive at reasonable and accurate risk projections.

Personal exposure assessments can best be studied if technology can be developed that 1) is sensitive at low part-per-billion concentrations of individual air toxics, 2) can be used in a relatively unobtrusive manner and 3) should be reasonably inexpensive to purchase and analyze.

Under an NUATRC contract, researchers at The University of Texas School of Public Health (UTSPH) have determined the feasibility of using passive personal monitors to detect and quantify air toxic exposures. We have determined that it is indeed feasible to use these badges in both indoor and outdoor environments, and to assess over a 24 hour period the actual exposures experienced by people to specific air toxics. We have correlated badge exposure data with simultaneous air monitoring information collected by the Texas Natural Resource Conservation Commission (TNRCC) and the Houston Regional Monitoring (HRM) Network. Both TNRCC and HRM data are gathered using evacuated canisters requiring careful conditioning. These data are expensive to obtain and result in analytical delays before the data are available, compared to the passive monitors developed by UTSPH under contract with the Leland Center.

The NUATRC is ready to begin a national program utilizing this technology in urban areas. We are developing a Request for Application (RFA) which is a national advertisement in academic and research circles to solicit proposals to carry out the first such personal exposure study, which we intend to be focused on three major urban areas, Houston, Los Angeles and the New York/New Jersey metropolitan area. The NUATRC estimates that about $300,000 annually in federal funds would be needed for three years to complete this research. We can amplify the specifics of this study proposal for the Subcommittee should that be necessary.

In related personal exposure studies, we are seeking to incorporate these passive personal monitors in existing federal environmental and health studies, which do not at this time include daily exposure assessments. CDC's NHANES study is a fruitful area for obtaining this exposure information to complement health data. NHANES representatives are enthusiastic about this possibility. EPA's NHEXAS study is now in a pilot phase in three areas, and the personal exposure and dose-response information needs in the NHEXAS studies would also present a good opportunity for personal monitor use. NUATRC involvement in both studies would require about $170,000 per year in EPA funds.

## Application of Biomarker Technology

The second major research "niche" defined by the Center's Scientific Advisory Panel is the use of biomarkers in air toxics environmental health studies. In brief, a biomarker is any indicator or measurement of human body tissues, fluids, etc. that is related to exposure to the particular toxin, e.g. lead in blood, DNA or protein adducts in tissue samples, etc. The NUATRC will pursue research in this area as biomarkers for air toxics are identified for use in risk-related studies.

The NUATRC hosted a major scientific Symposium on Air Toxics: Biomarkers in Environmental Applications, held at The University of Texas M.D. Anderson Cancer Center in Houston, Texas on April 27-28, 1995. The program for this Symposium featured nationally-recognized research scientists who addressed the specifics of how biomarker technology can be used to understand environmental air toxics health effects in human populations. The results from that Symposium, including the findings of Expert Working Groups convened to define promising research directions, are scheduled for fall, 1996 publication in Environmental Health Perspectives. Pre-publication information can be provided to the Subcommittee if so desired.

The NUATRC remains cautious about multi-year financial commitments in a "frontier" research area like biomarker technology, since sufficient funding is necessary to initiate and complete these kinds of studies, which tend to be long-term and expensive. NUATRC is anticipating a $225,000 annual research effort in the biomarker area.

## Metal Induced Health Effects

A third research area of interest to NUATRC is studies of the mechanisms of metals-induced respiratory and immune system health effects. With the current concern surrounding the importance of particulate matter on human mortality and morbidity, it is important to study those metal air toxics which move through the atmosphere associated with particulates. Certain metals have been shown to be important respiratory and immune system agents in occupational studies, wherein respiration is the primary exposure pathway. Asthma, fibrosis, lung inflammation and effects on specific immune cells are known to be affected by specific metals and/or particulates. While of somewhat lower priority to NUATRC than exposure assessment, this research area is one of considerable future promise. We are budgeting $225,000/year for this work.

## Acute Health Effects

Finally, NUATRC plans to focus its environmental health research on acute and subchronic health effects in the respiratory, immune, and perhaps neurological systems. We do not plan to emphasize chronic illnesses such as cancer, as significant research in these areas is already underway elsewhere. An early 1997 major Air Toxics Acute Health Effects Workshop is under development by members of NUATRC's Scientific Advisory Panel. The NUATRC federal budget request includes $37,500 for workshop planning and implementation.

## Board of Directors

In our testimony last year, we stressed the importance of completing the membership of the Board of Directors. The Clean Air Act Amendments of 1990 require the Speaker of the House of Representatives and the Senate Majority Leader to each appoint three members to the Center's nine-member Board of Directors. The President is to appoint three members as well. The six Congressional members were selected in the fall of 1994, and two Presidential selections have now been confirmed. One remaining Presidential appointment is needed, and the White House indicates that this individual will soon be named.

The Board of Directors is a nationally-recognized group of pre-eminent research directors, academicians and environmental regulators who have distinguished themselves in a variety of relevant environmental and public health disciplines, and whose selections represent close adherence to Clean Air Act language and intent. The eight members of the Board of Directors include Professor Patricia A. Buffler, Dean of the School of Public Health at the University of California at Berkeley, who serves as Chairperson. Drs. Devra Davis (World Resources Institute), Joseph Graziano (Columbia University), John L. Hall (John Hall Associates), Marcus M. Key (University of Texas (retired)), James M. Lents (Southern California Air Quality Management District), M. David Low, (The University of Texas-Houston Health Science Center), and Gerald van Belle (University of Washington) complete the current membership.

A complete and functioning Board of Directors is important to the Center's progress in terms of its ability to interact with EPA, academic, regulatory and private sector organizations in furtherance of NUATRC's research and financial goals. We continue to urge completion of this membership via a third Presidential selection.

## Scientific Advisory Panel

The Board of Directors of the Leland Center acted promptly in mid-1995 to select the important Scientific Advisory Panel (SAP), which advises the Board on research directions. Consistent with the law, key environmental and public health disciplines are represented on the SAP, including toxicologists, respiratory physiologists, biostaticians, exposure assessors, epidemiologists, etc. The members include Drs. Crump (ICF-Kaiser), Dement (Duke), Dockery (Harvard), Eschenbacher (Baylor), Henderson (ITRI), Koenig (Washington), Pope (Brigham Young), Schwartz (Harvard), Sexton (Minnesota), Spengler (Harvard), Teta (Union Carbide), Warheit (du Pont), and Wogan (MIT). Dr. Eschenbacher serves as the Chairman. This Panel met for the second time in February, 1996 and agreed upon the research structure and prioritization described above to guide the NUATRC research program. The Panel recommends courses of action to the Board of Directors, including acceptance of research findings and awarding of research grants.

## Support

The bulk of the financial support for the Leland Center has come from EPA via Congressional appropriations and we continue to work closely with the EPA Office of Research and Development. As a result of the protracted negotiations over the FY'96 federal budget, the Leland Center has not yet received the FY'96 appropriation agreed to in last year's Congressional budget process. This has forced us to delay initiation of the major Personal Exposure Assessment research program discussed above. We did however, have increasing success with our private sector financing, noting a 100% increase in 1995 in company contributions over the 1994 level. We also are seeking operating grant support from major philanthropic foundations so that both federal and private sector contributions can be directed more effectively to actual research support. We are also encouraged by the possibility that state agencies, such as the Texas Natural Resource Conservation Commission (TNRCC), may be able to support part of this work via innovative funding approaches currently under development. Finally, we are interacting with NASA personnel at the Johnson Space Center in Houston concerning possible use of the passive air toxics monitors in spacecraft environments, with special emphasis on aldehyde measurements. We are seeking to increase our financial support base in whatever manner is appropriate, but we continue to be primarily dependent on the federal appropriation process.

The funding delays in 1996 are impacting our progress. We respectfully request an FY'96 appropriation of $1.34M to allow us to move forward with the research plans we have developed and which are described in this testimony. While we recognize this is a more than two-fold increase over our $500K appropriation last year, we did request nearly $1M last year which was reduced in the course of the legislative process.

It is important that the Leland Center implement a comprehensive research program on air toxics personal exposure assessments. The time period in which EPA will have to make nationally-important risk assessment and risk management decisions concerning air toxics is rapidly approaching. If NUATRC is to meet its Congressional charge, it must be adequately supported in its research program.

In the 1990 Clean Air Act Amendments, Congress wisely adopted a public/private partnership in the design, funding and implementation of this needed environment health research. The concept, which leverages the financial support from both sides, also provides balanced scientific input to the research program, which in the long run should result in better acceptance of the results, and reduced litigation in the federal and state rulemaking process. Thank you for your consideration.

## PREPARED STATEMENT OF DR. ROBERT J. SWENSON, VICE PRESIDENT FOR RESEARCH, MONTANA STATE UNIVERSITY, CHAIRMAN, COALITION OF EPSCOR STATES

I am pleased to have the opportunity to submit this statement in support of the Experimental Program to Stimulate Competitive Research (EPSCoR) and in support of the budget of the National Science Foundation and scientific research in general. My statement is submitted on behalf of the Coalition of EPSCoR States and the nineteen states[1] that participate in EPSCoR.

EPSCoR was established by the National Science Foundation in response to Congressional concerns about the uneven distribution of federal funding for science, engineering and mathematics research. The geographical imbalance in the distribution of federal research funds existed when EPSCoR was created, and it continues to exist today. In FY 1993, the latest year for which we have published data, for example, three institutions in this country received more in federal R&D dollars than all the institutions in the 18 EPSCoR states and Puerto Rico combined.

Another way of looking at it is that, in 1993, the EPSCoR states, with 15.6% of the U.S. population received only 7.6% of federal funding for university R&D.

What concerns many of us in the EPSCoR states is that a strong research base and significant research funding translates into many important things both for institutions of higher education and for the states where they are located. A strong research base means the ability to attract and retain good faculty and to build programs which will attract other researchers and external resources. It means the ability to improve teaching and the educational experience at both the graduate and undergraduate levels. Good research capabilities and good educational opportunities are known to attract industry, to help support industry and small businesses in the area and to create well-paying jobs which contribute to the tax base and the economic well-being of an area.

Those without a strong research base are at a disadvantage in research competitiveness, in education and in economic development.

EPSCoR has helped many of us in states without a strong research tradition to develop competitive research. I believe that there are several special features in the EPSCoR program which make this possible. First and foremost, is that the program is a competitive one, peer-reviewed. In fact, it may be one of the most comprehensively reviewed programs in the Federal government. Generally, proposals are peer reviewed at the state level before the state plan is submitted to the National Science Foundation. Once submitted, the proposal is reviewed by the National Science Foundation, using nationally recognized experts, for its scientific merit and then again for the contribution it can make to building a stronger research infrastructure in the state.

Secondly, the program is a state-based program. Research priorities are determined by the institutions at the state level and are designed to support the development of expertise which will contribute to institution and state priorities.

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[1] Alabama, Arkansas, Idaho, Kansas, Kentucky, Louisiana, Maine, Mississippi, Montana, Nebraska, Nevada, North Dakota, Oklahoma, South Carolina, South Dakota, Vermont, West Virginia, Wyoming, and the Commonwealth of Puerto Rico.

Thirdly, the program is a true federal-state-institution partnership. The program operates at the National Science Foundation through a cooperative agreement, which allows for continuing interaction between NSF staff and local participants. State governments and participating institutes have provided the matching funds, (historically, approximately $2 for every $1 of Federal funds), required under the program and statewide committees determine plans and priorities. Collaborations among institutions in a state leads to a critical mass focused around key scientific and research areas.

I want to emphasize several points: EPSCoR is a research program. It's objective is competitive, recognized research in areas important to the institution and state. Its ultimate goal is to move researchers and research areas into the mainstream of the nation's research enterprise. We in the EPSCoR states can be competitive, even if we must limit the scope and number of areas in which we do compete. For this reason, we are concerned about funding not only for the EPSCoR program but also for the National Science Foundation in general.

The basic EPSCoR program at NSF is currently funded at $35.9 million and the FY 1997 budget request is the same. Legislation has been introduced, S. 1445, which would not only preserve the basic EPSCoR program at the current level but also authorize an additional $19 million for various joint or collaborative programs, including paired funding between the education and research directorates, joint projects between EPSCoR and non-EPSCoR institutions, including national laboratories and centers, and collaborations among EPSCoR institutions throughout the country. The NSF staff have already taken several efforts to encourage such joint efforts and, again, we see these as important steps to integrate EPSCoR researchers and research areas into the mainstream of U.S. science and technology policy. We applaud the staff's leadership in this effort.

NSF EPSCoR is working in our states. It is relevant because the states and universities, working together, assure that proposals reflect the priorities of the states, their universities and the private sector, as well as addressing national priorities. I have attached to this statement an excerpt from a paper prepared by the EPSCoR Foundation detailing some of the success stories of the EPSCoR program.

The investment in EPSCoR is small -- about one percent of NSF's budget. But in 18 states and Puerto Rico that one percent buys a substantial effort, and its importance is far beyond what the dollar amount would suggest. We believe that we can successfully utilize additional funding in the collaborative ways outlined in S. 1445 and request your support for such an increase. The key to further development of research capability in the EPSCoR states is increased collaboration with one another and competitive groups outside the states.

In 1991, this Subcommittee also established an EPA-EPSCoR program and appropriated money for planning grants, which the EPSCoR states used to determine how to improve their capabilities in environmental research. EPA-EPSCoR was immensely popular in our states because, even though our states tend to be rural, we have many pressing environmental issues, from ones related to agriculture, to protection of forest lands and parks which are national assets to Superfund sites.

Unfortunately, appropriations for EPA-EPSCoR have not been commensurate with either the interest or the needs in our states and we are anxious to see the program develop in a more comprehensive manner. Therefore, the Coalition of EPSCoR states is requesting that $5 million be appropriated for EPA EPSCoR in FY 1997. While we would hope that much of this funding would be used to support peer reviewed individual and group research projects within our states, we would also like to see a portion of the funding used to insure that our researchers and research projects are integrated into the broader EPA research efforts. Again, what we as EPSCoR states are seeking, is not a separate or special approach but an effort which will result in our inclusion in the EPA research mission.

Finally, this Subcommittee has also been supportive of the development of a NASA EPSCoR program. Title III of the FY 1993 NASA Authorization Act (PL 102-588) created a NASA-EPSCoR and authorized NASA to use $10 million from the FY 1993 appropriation for Research and Development for the program. In actuality, the program has operated at a level of approximately $5 million annually. Projects funded to date have enabled the winning six states to enhance their existing space science and education infrastructure by purchasing equipment, supporting graduate students and conducting interdisciplinary research. This past year, NASA staff made a particular effort to connect individual researchers and research projects in the EPSCoR states to research efforts in their various field centers. We applaud this initiative and encourage NASA to continue it. For FY 1997, we are requesting an appropriation of $10 million.

We in the 18 EPSCoR states and Puerto Rico are dependent upon this Subcommittee for a significant part of our program and for the bulk of our federal university R&D funding. We are a small amount in your multi-billion dollar appropriations bill. EPSCoR dollars to date have paid big dividends for our state and enjoy strong state support. I cannot emphasize too strongly the importance of this funding. It is our seed money and the catalyst for activities whose economic benefits, job creation capabilities and contributions to the quality of life in our states should not be underestimated.

# EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH

### *What is EPSCoR?*

The Experimental Program to Stimulate Competitive Research (EPSCoR) is a science and technology (S&T) research and development (R&D) program within seven Federal agencies. Through a merit review process, EPSCoR is improving our nation's S&T capability by funding research activities of talented researchers at universities and non-profit organizations in 18 states and Puerto Rico (states that historically have not received significant Federal R&D funding). EPSCoR helps researchers, institutions, and states improve their research capabilities and quality in order to compete more effectively for non-EPSCoR research funds. EPSCoR is a catalyst for change and is widely viewed as a "model" Federal-state partnership.

By increasing the quality of research within the 18 EPSCoR states and the Commonwealth of Puerto Rico, EPSCoR is:

- facilitating U.S. world leadership in science and technology by strengthening our nation's science and technology research capability.
- ensuring that all parts of the country participate in and benefit from the building of scientific and technological expertise.
- building local, state and national support for stronger S&T research and education.
- expanding economic opportunity and creating jobs through technology transfer.

### *Why is EPSCoR Important?*

Our nation's S&T research funds have historically been concentrated in a small number of institutions and states that were positioned to take advantage of the dramatic growth in Federally-funded academic research after World War II. This concentration was fueled by a national science policy that focused resources primarily on existing centers of excellence.

As our nation moves toward an S&T policy increasingly aimed at global economic competitiveness and economic well-being, it is imperative that all states have a sufficient S&T base to participate and contribute. Students and residents of all states must have access to high-quality education, front-line research, and the quality of life and jobs that comes with an active and competitive R&D base. S&T capability, like education in general, cannot be limited to a select few states and institutions for our nation to progress and maintain world leadership.

### *Who Participates in EPSCoR?*

The National Science Foundation (NSF) established EPSCoR in 1978 in response to Congressional concerns over uneven distribution of Federal S&T research funds.

### *States*

EPSCoR now operates in 18 states: Alabama, Arkansas, Idaho, Kansas, Kentucky, Louisiana, Maine, Mississippi, Montana, Nebraska, Nevada, North Dakota, Oklahoma, South Carolina, South Dakota, Vermont, West Virginia, Wyoming and the Commonwealth of Puerto Rico.

EPSCoR: A Catalyst for Change

### *Agencies*

The success of the NSF EPSCoR program led Congress to expand the program and, since 1990, create EPSCoR-related programs in the Department of Energy (DoE), the Department of Defense (DoD), the Department of Agriculture (USDA), the National Aeronautics and Space Administration (NASA), the National Institutes of Health (NIH), and the Environmental Protection Agency (EPA).

### *EPSCoR Statewide Committees*

Leadership in each state is provided by an EPSCoR Statewide Committee comprised of leading scientists, university administrators, political leaders, and representatives of the private sector. The Committees spearhead new policies and resources, ensure rigorous merit review processes, generate high levels of collaboration, keep EPSCoR responsive to state and regional needs, and cultivate broad-based support for S&T. The dedication and commitment of state leaders is at the core of EPSCoR's success.

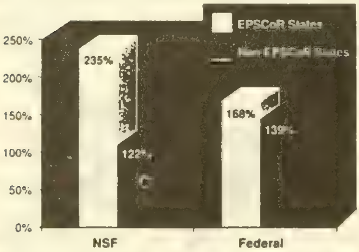
### *EPSCoR is Improving the Quality of S&T Research, But More Work Remains*

Reliance on outside merit review ensures that EPSCoR research meets national standards of quality and that EPSCoR funds only high-quality research.

The goal of EPSCoR is to support individuals and groups who have the potential to obtain increased R&D funding for their work. EPSCoR is not a permanent source of funding, but helps researchers and institutions improve their capability and quality—and then to compete for non-EPSCoR Federal and private sector research funds.

The fact that many EPSCoR researchers have received widespread acclaim—and significant competitive funding—shows that EPSCoR merit review is a success. EPSCoR states are winning a larger share of the increase in competitively awarded Federal R&D funding compared to non-EPSCoR states.

**Percent Increase in Competitively Awarded R&D Obligations to Universities and Colleges, FY 1980-1991**



For example, over FY 1980-FY 1991, NSF funds awarded to EPSCoR states increased by 235%, compared to a 122% increase in non-EPSCoR states. EPSCoR states also made modest gains Federal-wide. This means EPSCoR is fulfilling its mission and serving a unique role in our nation's S&T development by improving the competitive quality of research in participating institutions and states.

**For More Information:**
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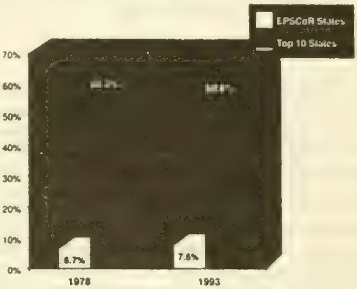
jdanek@tig.vsadc.com (e-mail)

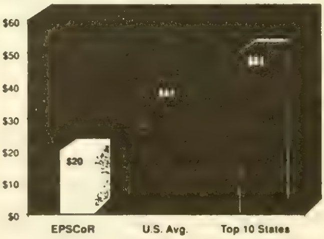
However, because of the extremely low funding base from which EPSCoR states started, the uneven distribution of Federal R&D funds persists.

**Federal R&D Obligations to Universities and Colleges, FY 1978 and FY 1993**



As shown in the chart above, EPSCoR states received only 7.6% of all Federal R&D funds awarded to universities and colleges in 1993, up from 6.7% in 1978. In contrast, the top 10 states received over 60%. In addition, the top three research universities in the nation received more Federal R&D funding in 1993 than all institutions in the 18 EPSCoR states and the Commonwealth of Puerto Rico combined. As shown below, Federal distribution of R&D funds is also widely disparate on a per capita basis.

**Federal R&D Obligations to Universities and Colleges, Per Capita, FY 1993**



### *EPSCoR: A Sound Investment for the Future*

In a Federal budget exceeding $12 billion annually in funding for R&D at universities and colleges, only $83 million is directed through the EPSCoR program to strengthen S&T in these 18 states and Puerto Rico. With a relatively modest investment, EPSCoR is playing a unique role in developing our nation's science and technology capability. A strong future for EPSCoR is a sound investment for our nation's future.

## RECENT EVENTS IN THE STATES

**Idaho...** The annual Idaho EPSCoR Program Review will be held October 23-24, 1995. All project investigators will present results from their second year. Idaho's progress will be evaluated by members of the Projects Advisory Board and a group of nationally recognized scientists and engineers.

**Kansas....** The KTEC FY96 budget has been approved. Included is a $3.9 million "Futures Fund" to provide matching funds for EPSCoR and EPSCoR-like Federal initiatives. This gives Kansas flexibility to go after many more Federal opportunities. This comes in a year when there have been rescissions in the general higher education budget in the State.

**Kentucky....** Kentucky recently hosted its annual meeting of EPSCoR investigators from NSF, NASA, DOE, and Agriculture. The featured speaker was Dr. Luther Williams, the Assistant Director of NSF. Dr. Williams stressed EPSCoR's high-standing in the NSF portfolio of programs and the importance of the State's committment to support the EPSCoR effort and to maintain high standards in the selection of areas to be developed. Sherry McGee of NASA and Donna Prokop of the Department of Energy also participated in the meeting.

**Louisiana...**Governor Edwin Edwards issued an Executive Letter charging the LASER (Louisiana A Stimulus for Excellence in Research) Committee with the responsibility of developing a Governor's Science Planning and Policy Advisory Council. The Council will plan, facilitate and coordinate State investments in scientific research. The Council is to be launched by November.

**Mississippi....**On June 21, Mississippi is having external consultants in the State to review progress under EPSCoR and to strengthen its EPSCoR Systemic Improvement plan. All EPSCoR investigators and committee members will participate in this review and planning session.

**Montana....**Montana hosted Commerce Undersecretary for Technology, Dr. Mary Good, at a competitiveness forum on May 31-June 1. The event included a CEO roundtable, workshops on university, state and business partnerships, and interactions with Commerce staff. Participants included: Gary Bahula, Deputy Undersecretary for Technology; Kelly Carnes, Deputy Assistant Secretary for Technology Policy, and Marc Stanley, Director, Advanced Technology Program.

On June 24, MONTS (Montanans on a New Trac for Science) will hold its annual State EPSCoR Conference. Featured speakers include Dr. Robert Huggett, EPA Assistant Administrator of Research and Development, Mr. Michael Crowley, NSF EPSCoR, and Mr. Richard Bendis, President, Kansas Technology Enterprise Corporation.

**Nebraska....** The Nebraska Task Force on Science and Technology Planning, a 35-member task group comprised of public, private and academic sectors, recently presented its report, "Nebraska Science and Technology: A State Policy" to Governor Ben Nelson. The Task Force evaluated what the State "is doing and should be doing in science, technology, research and economic development." The Task Force also recommended that the Governor establish a structure to promote partnerships between government, educational entities and the industrial sector.

**Nevada....**The annual Nevada Statewide EPSCoR Conference, held in Reno on February 23, 1995, stressed the theme "Research and Economic Development." Several of the speakers were from outside academia: the speakers included representatives of the Nevada Office of Economic Development, the Small Business High Technology Institute, and a high-tech entrepreneur.

A Statewide Chemical Physics Conference was held in Tonopah, Nevada....40 Nevada researchers in chemistry and physics participated. The conference illustrates the emerging capacity of chemical physics in Nevada, a focus area for Nevada EPSCoR.

**Puerto Rico....**Puerto Rico held its annual EPSCoR meeting in April in Dorado, PR. Over 80 scientific presentations were presented. UPR President Maldonado gave the keynote address.

**Vermont....** On May 1, Vermont EPSCoR hosted a SBIR Workshop during which Michael Crowley, NSF EPSCoR gave advice on SBIR grants. Senator James Jeffords co-sponsored the workshop, along with the Vermont Department of Economic Development.

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**Vermont....** On May 1, Vermont EPSCoR hosted a SBIR Workshop during which Michael Crowley, NSF EPSCoR gave advice on SBIR grants. Senator James Jeffords co-sponsored the workshop, along with the Vermont Department of Economic Development.

## PREPARED STATEMENT OF THE NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS

The National Association of Conservation Districts is a nonprofit association that represents the nation's 2,950 conservation districts and the more than 16,000 men and women who serve on their governing boards. Established under state law, conservation districts are local units of state government charged with carrying out programs for the protection and management of natural resources at the local level. Conservation districts work with nearly two-and-half million cooperating land owners and operators and provide assistance in managing and protecting more than half of the privately owned land in the contiguous United States.

Most programs carried out by conservation districts are done in cooperation with federal and state conservation and natural resource agencies. Since districts share common objectives and joint implementation responsibilities with these agencies, it is important for us to share our recommendations on federal funding for the programs in which they are involved.

Since the passage of the 1972 Federal Water Pollution Control Act (Clean Water Act), tremendous strides have been made in cleaning up point sources of water pollution such as industrial and municipal waste water discharges. In many respects, that has been the easier part of the task. The progress in treating point sources has been made possible, in large part, by an investment of nearly $80 billion in federal funds for the construction of municipal waste water treatment plants.

Nonpoint sources of pollution - runoff from cropland, construction sites, mining activities, lawns and city streets - are much more elusive targets and are now considered the major impairment to the nation's waters. In fact, in its most recent National Water Quality Inventory (State Clean Water Act 305(b) reports), the U.S. Environmental Protection Agency (EPA) identified agricultural runoff as contributing about 60 percent of the pollution found in rivers and half of the pollution found in lakes. Although EPA's report has been strongly criticized both for overestimating agriculture's contribution to water quality problems and for being scientifically flawed, it is clear that agricultural runoff must be addressed if the nation is to meet its water quality goals.

Conservation districts have been involved in nonpoint source pollution control efforts since their inception in the 1930s - long before the term nonpoint source pollution was even coined. In more recent years, they have been leading implementation efforts for the agricultural and other components of the Clean Water Act Section 319 nonpoint pollution control programs at the state and local level.

When Congress enacted Section 319, it recognized that nonpoint source pollution control is best addressed through state and locally driven management programs. With federal assistance and state matching efforts, the Section 319 state management programs have resulted in considerable progress in controlling nonpoint source pollution. However, much still remains to be done.

A principal goal of conservation districts is to ensure that these programs work and we know, without a doubt, that if they are going to work, they must be developed with input from the local people who are out on the land every day. We also know that, cooperative, incentive-based programs are the most effective and workable ones.

Lack of adequate funding has been and still is the main reason that states haven't made more progress in solving nonpoint source pollution problems. If we are to meet the water quality goals set forth in the Clean Water Act, Congress must adequately fund Section 319 grants to states and provide the flexibility for states to find creative and innovative ways to address their concerns.

Many states have used the infrastructure developed under the 208 and 319 programs to formulate energetic approaches to controlling nonpoint source pollution, especially agricultural runoff. More than 30 states have established agricultural nonpoint programs that provide technical and financial assistance to farmers and ranchers to implement conservation practices that stem runoff.

**Recommendations**

EPA's proposed fiscal year 1996 funding was grouped into a few broad categories instead of individual program accounts. Of these, issues of concern to conservation districts would be included in the "Grants to States" budget item. Recognizing that Congress may again use this approach, we urge you to earmark certain program activities to ensure that funds appropriated are directed to the resource areas originally intended under the Clean Water Act. Therefore, our earmark recommendations will follow the program accounts established prior to 1996.

We recommend that the general category, "Grants to States," should be funded at $786 million in fiscal year 1997. Within that category we recommend the specific earmarks below:

| | |
|---|---|
| State Program Grants (Sec. 106) | $80.20 million |
| Clean Lakes Program (Sec. 314) | 6.00 million |
| Nonpoint Source Grants (Sec. 319) | 150.00 million |
| Great Lakes Program (Sec. 118) | 15.20 million |
| Gulf of Mexico Program | 7.30 million |

We also recommend that the Water Infrastructure account be funded at $2.50 billion.

We appreciate the opportunity to offer our recommendations for funding EPA's water quality programs during fiscal year 1997. We urge you to keep in mind that our collective ability to address the nation's nonpoint source pollution problems depends upon a strong federal commitment to the partnership.

## PREPARED STATEMENT OF LIZA K. BOWLES, PRESIDENT, NAHB RESEARCH CENTER

Mr. Chairman and Members of the Subcommittee:

I am Liza K. Bowles, President of the NAHB Research Center. The Research Center is a wholly-owned subsidiary of the National Association of Home Builders, whose 182,000 members include 57,000 builders who construct 80 percent of U.S. housing.

### The Future of Housing

At the NAHB Research Center, we carry out research, testing, and certification programs in a number of areas. However, the largest part of our work relates to the future of housing in America. Our task is to identify desirable change, and to create ways to bring change about.

This would be easier if it were just a matter of making this or that adjustment in the way that our industry operates. It would also be easier if our only concern were how to build a better house.

However, housing is a national need and a universal commodity. The industry that provides it plays a large role in our economy. When we work to change housing, we impact many other major issues that face Congress and the nation.

### Federal Participation

In previous years, the U.S. Department of Housing and Urban Development (HUD), the U.S. Environmental Protection Agency (EPA), and the Federal Emergency Management Agency, have supported our efforts to improve American housing and to bring it into the best possible relationship to other national priorities and concerns. This support has addressed many issues at a single key point, with highly leveraged benefits. Yet, even at present levels of activity, our nation currently lags far behind other developed nations in support of housing research. And, we feel serious concern about possible diminution of this support. America cannot reduce its commitment to a satisfactory housing future. Reduced support will be reflected in reduced protection of the environment, progressive loss of the battle for affordability, reduced safety for people and families in their homes, and progressive harm to our position in international trade. It is far too high a price to pay.

### Three Housing Issues

Three issues that relate to many of our programs are:

- resource conservation in home building and home use;
- housing affordability; and
- housing safety in natural disasters such as hurricanes and earthquakes.

I would like to describe a few of our programs that relate to these issues. These types of activities would be heavily jeopardized or lost by reduction in Federal assistance.

### The Resource Conservation House

In 1986, our parent organization, the National Association of Home Builders, established the NAHB Research Home Park, on a parcel of land that NAHB acquired near our headquarters facility. We have thus far completed four research houses in the Park, and are currently building four townhouses, called the 21st Century Townhouses.

The most recently completed project prior to the Townhouses was called the Resource Conservation House. This house was built with materials that conserve the nation's resources. The house received immense national and international publicity. The widespread coverage helped to raise awareness among builders and home buyers of the extensive relationship between home building and the environment. The house helped to create an approach to home construction that is sometimes called "green building."

### The 21st Century Townhouses

This project, which is now nearly complete, is designed to highlight and demonstrate two themes:

- innovative building products; and
- advanced energy efficiency.

I will not burden you with technical information, but will simply name the systems that were used to build the houses. They are:

For House #1: Structural insulated panels.
For House #2: Concrete forming system.
For House #3: Steel framing.
For House #4: Autoclaved aerated cellular concrete units.

Taken together, these systems offer alternatives to traditional wood framing. This will enable builders to measure alternative approaches against housing affordability as supplies and prices of materials move and shift in the future.

In addition, several of these products give promise of high energy efficiency. When the houses are completed, we will conduct research on the energy performance of the four systems, during both heating and cooling seasons, and will provide the results to builders, public officials, and home buyers.

### Construction Waste

Construction of the average home generates some four tons of waste. Not long ago, this waste could simply be carted to a landfill and dumped. Today, we must develop new and better answers. With funding from the U.S. Environmental Protection Agency, we are involved in a 2 1/2-year study to investigate, evaluate, and demonstrate environmentally sound, cost-effective voluntary methods for reducing the amount of residential construction waste that ends up in municipal waste facilities and landfills.

Our approach to this study illustrates an important feature of our programs. To get realistic answers, we involve local builders and we work under actual field conditions whenever possible. In 1995, we carried out studies in three locations, in the east, the midwest, and the far west, with the support of the local home builders' association and local builders. We also talked with representatives of local and state governments, the building and materials industries, and private-sector waste haulers.

We then moved into a second phase in which we designed and implemented pilot programs at two of the three sites. In the final phase, we will create a builder's guide and a video on managing construction waste.

### Home Safety in Natural Disasters

Recent events have given us what we might call unwelcome opportunities to study the performance of housing in hurricanes and earthquakes. With support from the U.S. Department of Housing and Urban Development, we have conducted detailed on-site studies of damage to homes following disasters such as Hurricane Andrew and the earthquake in the vicinity of Northridge, California.

This work has caused us to believe that the usual methods for conducting such studies are in need of change. Existing methods stress instances of severe damage. Such an approach provides little perspective either on overall performance or overall risk. In our studies, we worked with scientifically representative samples of homes within the immediate area of the disaster's greatest impact. The results showed a significant degree of resilience and resistance to damage in a large proportion of homes, particularly recently-built homes. They also revealed the types of construction and the specific construction features that incurred the most damage, and pointed to the causes.

### Safety and Affordability -- An Urgent Strategic Frontier

Unlike most areas of housing research, housing performance in natural disasters involves injury and fatalities. We therefore regard an issue that arose from our hurricane and earthquake studies as being of exceptional importance. The issue is, what is the relationship between safety and affordability in housing? Can they be brought into balance? Can design changes be made that would achieve an acceptable level of protection without significant increase in cost?

This issue has not been addressed by publicly-funded research. Public sector efforts have focused on improving safety through engineering, without a full understanding of overall housing performance and without focusing on affordability.

Our parent organization, the National Association of Home Builders, has provided seed money to begin a study entitled "Housing Affordability Through Design Efficiency," which will address the issue. The depth of the research and the ultimate success of the effort depends on the creation of a joint program that includes support from private industry, the Federal Emergency Management Agency, and the Department of Housing and Urban Development. We urge FEMA and HUD to support this study, whose direct beneficiaries will be persons and families subjected to future disasters.

### Working Together to Shape the Future

These examples show how we use Federal support to advance the frontiers of housing and to bring it into a full relationship with broad national problems. Going backwards or even standing still will result in loss. If we do not keep up, present gains will decline in value through changing times. Problems such as the environment will grow more severe, and alert international economic interests will be quick to spot our growing weakness and reduced capability. It is a picture of decline in a field in which we have long been undisputed world leaders, and it is a picture that we cannot accept. We urge you to maintain your support of excellence in American housing, and to help in shaping the future of housing to achieve essential benefits for the nation as a whole.

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## PREPARED STATEMENT OF THE NATIONAL HOUSING LAW PROJECT

Chairman Bond and members of the Subcommittee, the National Housing Law Project is a national legal advocacy organization which represents the interests of low income participants in and applicants for HUD programs on a range of issues including the production and preservation of low income housing. HUD's own recent Worst Case Housing Needs Study confirms that the federal housing programs serve only a small fraction of those in need. Nevertheless, its proposed FY 1997 budget in several significant respects fails to effectively target limited resources to those most in need.

The second installment of HUD's Reinvention Blueprint -- largely an implementation plan for the proposed budget -- continues to endorse the stripping away of more and more of the protections for low income persons that have been central to the federal housing programs since its inception. As a consequence, housing advocates and their clients remain gravely concerned that reduced funding, coupled with devolution of much of the former federal oversight to local housing authorities, will make it more difficult for the neediest persons to remain in public and assisted housing and almost impossible for such persons to gain admission.

Admission and security of tenure impediments likely from funding cuts that strain the federal and local housing funding are compounded by the drastic changes to the welfare system which, despite the Congress' failure as yet to adopt broad-scale welfare reform, have been implemented through waiver experiments in many states. We ask that reason tempered with compassion for those affected by these often drastic changes inform the Committee's decisionmaking as it goes about the difficult task of assuring that limited housing resources, first and foremost, serve those most in need.

Public Housing

Despite the recognition by this Committee and others in the Congress of the importance of federal operating subsidy to the quality of life for public housing residents, central to legislative proposals now working their way through the Congress as well as the Continuing Resolution under which HUD programs are currently funded, is an unnecessary assumption that federal operating subsidy will continue to shrink.

Several of the public and assisted housing reforms that have been endorsed in authorizing legislation, adopted in the vetoed FY 1996 appropriations bill, and, in fact, implemented through the Balanced Budget Downpayment Act, seem designed to aid in making up the operating subsidy deficit through the admission and retention of higher income tenants.

As any thoughtful participant in the discourse on public housing will concede that economic mix will not happen overnight. The deficit brought about as a result of reduction of operating subsidy simply cannot be made up from increased rents on the desperately poor public housing residents.

Accordingly, while we urge your support for the operating subsidy figure endorsed by the Council of Large Public Housing Authorities (CLPHA) of $3.3 billion, we cannot support extension into FY 1997 of legislative changes made for FY 1996 which threaten the safety net that public and assisted housing provides for the poorest occupants. The threatened repeal of the Brooke amendment which ties public housing rent to income, has been partially implemented through the FY 1996 $25 minimum rent. While a $25 minimum rent seems nominal to most of us, for households struggling to survive a crisis such as temporary unemployment or to provide for a family in states with the lowest welfare grants, the mandatory payment is catastrophic. Examples of families hardest hit are refugees who qualify for neither AFDC nor general assistance and whose refugee assistance benefits have run out and single adults with disabilities who have not begun to receive SSI.

Imposition of minimum rents is not the solution to this country's deficit spending problems. At most, it can be estimated that a minimum rent would raise $25 million. That is less than 1%

of the public housing operating subsidy appropriation and one-tenth of one-tenth of a percent of the deficit. It would be raised from the very poorest people in this country, public housing tenants with no income at all or with the lowest welfare grants in the country, i.e., monthly grants of less than $250. And most of it will not be collected because these people do not have the money to pay it. Instead, they will be evicted, driven from their homes onto the streets. How can anyone not feel shame at the prospect of our nation trying to cope with its budget deficit by putting our country's poorest families out on the street.

And the numbers of people we would be doing this too are not small. HUD's initial estimate is that 175,000 families participating in its programs will be affected, more than 50,000 in public housing, 80,000 in certificates and vouchers and 40,000 in project-based section 8. Those numbers may even be low, because the figures for individual states are less than the number of families in those states that have received notices of rent increases in those states.

We also urge the Committee's continued support for the public housing modernization program for which HUD requests a $3.2 billion Capital Fund including setasdies for Indian Housing Development and bonus funding for high performers among others. Commitment to the rehabilitation and upkeep of the nation's $90 billion plus investment in public housing is not rendered unnecessary by the devolution of broad authority for PHA operations to the local level. Despite its shortcomings and the fast pace of devolution and its consequences both intended and accidental, public housing will remain the best housing for the poorest persons into the foreseeable future. For those families, their neighborhoods and communities, the commitment to create healthier, family-friendly, more crime-free environments must continue and adequate public housing modernization funding is central to those goals.

Section 8

NHLP urges the Committee to continue the nation's longstanding commitment to increase the supply of affordable housing through the appropriation of incremental Section 8 assistance. The Department's request for funding for $290 million in one year certificates to facilitate the conversion of buildings to elderly-only and to voucher out distressed projects does nothing to address dormant waiting lists on which households languish in the nation's toughest housing markets.

As we have in the past we urge the Committee to rethink the already enacted lowering of fair market rents to the 40th percentile. Simply put, this action reduces the amount of housing available for low income families to rent and increases their costs for such housing as is available. The families most hard hit are the poorest voucher holders who cannot find landlords to rent to them where their rent to income ratios climb far above 30%.

We also ask that Congress not make the mistake it made in FY 1996 of requiring PHAs to delay reuse of turnover certificates and vouchers for three months. When that happened, people with the highest priorities for assistance -- such as battered women or people being displaced -- were forced to wait for three months until a turnover certificate became available. Some PHAs, confused by the change, closed down the issuance of certificates and vouchers altogether, even reissuance of certificates and vouchers just turned back in by families who had been searching for 60-120 days for landlords who would rent to them. Again, making the poorest people in the country, with the most desperate needs wait on the long lines for housing assistance for three more months is not a fair way to reduce the deficit.

Homeless Assistance

Homelessness continues to plague every corner of our nation's landscape -- central cities, suburbia and rural areas. We ask the Committee's support for increased funding for homeless assistance programs -- particularly section 8 certificates and vouchers which provide the path for transition from shelters and temporary living quarters to that permanent housing which is the key to advances in other central areas of life such as employment and education.

Conclusion

Housing advocates representing the interests of those populations most in need of the safety net provided by the federal housing programs are often accused of being unreasonably resistant to change. Clearly, the likely reduction in available federal funding over the coming years will lead inexorably to unprecedented change in who is served by the federal housing programs and how services are delivered. Recognizing the inevitability of change, we ask the Committee's continued commitment to the principle of preserving limited funding for those with the greatest housing need along with careful and compassionate implementation of administrative changes.

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## PREPARED STATEMENT OF PHILIP L. BORKHOLDER, EXECUTIVE DIRECTOR, THE NATIONAL INTERRELIGIOUS SERVICE BOARD FOR CONSCIENTIOUS OBJECTORS

### Introduction

My name is Philip L. Borkholder, Executive Director of the National Interreligious Service Board for Conscientious Objectors (NISBCO). NISBCO represents the major religious faiths in this country, and many smaller denominations which have an interest in defending and extending the rights of conscientious objectors. In the course of this effort we have become experts on the conscription system, having helped shape relevant law since 1940. We continue to monitor closely conscientious objector law and its context—the Selective Service System, and military procedures and regulations which affect conscientious objectors.

Our primary concern today is the continuing requirement of peacetime draft registration and the unnecessary burden this places on society. We were pleased with the House Subcommittee on VA, HUD, and Independent Agencies' decision last year to terminate funding for this unnecessary agency, and we were discouraged by the reversal of this decision in the full committee. We repeat our assertion that the Selective Service System should be put in deep standby, or eliminated altogether. The first step in doing so is to eliminate the appropriation for draft registration.

### Peacetime Registration: An Exercise in Redundancy

During the two World Wars, the United States conscripted over ten million men through a combined total of six registration days. There was no ongoing registration, and there was certainly no peacetime registration. In those days there did not exist comprehensive lists of registration-age youth (the Selective Service System claims that Motor Vehicle lists cover approximately 86% of registration-eligible youth) which could be automatically processed. The accessibility of these lists to the Selective Service System constitutes a *de facto*, though non-consensual, registration process. These and other lists could be utilized immediately by the Selective Service System in the event of a national emergency requiring registration and conscription. We do not believe that an emergency mobilization would be delayed by a single day should peacetime registration or the Selective Service System be eliminated

## The Need for a GAO Study: How Long Would it Take to Reinstate a Military Draft?

The past year's congressional debates have made it obvious that certain crucial facts are missing from discussions of peacetime draft registration and the Selective Service System Perhaps most important is the question of how long it would take to reinstate a military draft, should the peacetime registration requirement or the Selective Service System itself be ended. Estimates put forth by members of Congress range from 3 months to over a year. There is no need for speculation on this matter, as it really is an empirical question. We recommend therefore that this Committee request a General Accounting Office study in order to clarify this critical point.

## Historical Overview of Peacetime Registration

In order to appreciate the reasons why the Selective Service System should be placed in deep standby or eliminated, it is necessary to review briefly the history of peacetime registration.

In 1972 the last conscripts were inducted into the Armed Forces. The Gates Commission in 1973 recommended that the Armed Services move toward an all-volunteer force. Six years later, in 1979, the full House, in a bi-partisan vote of 252-163, rejected a House Armed Services Committee proposal to begin peacetime registration. The Administration was directed to report on whether pre-mobilization registration was needed, and Dr. Bernard Rostker, then the Director of the Selective Service System, prepared a draft report which recommended that registration remain in standby status.

However, President Carter was facing a difficult reelection campaign and accusations of being "soft" on the Soviets, following their invasion of Afganistan. In his 1980 State of the Union address, President Carter announced that he would send legislation to Congress authorizing peacetime registration. Accordingly, Dr. Rostker changed his report recommendation to support the President's decision.

By June 25 of 1980, both the Senate and the House had approved, against strong Republican opposition, the authorization of a $13.3 million transfer from DoD to the Selective Service System to begin registering young men. Two days later, H.J. Res. 521 was signed into law (P.L. 96-282)

## Peacetime Draft Registration Today

Since 1980, the Selective Service System has been registering young men for a draft which, according to the DoD planners and Selective Service itself, will in all likelihood never be required. This redundant exercise in preparedness has cost taxpayers $400 million since that time.

The release of the 1993 Secretary of Defense Report to the President and the Congress on the continued requirement for draft registration should have spelled the end of peacetime registration Let me highlight the findings of that review:

- **The report found that "peacetime draft registration could be suspended with no effect on military mobilization requirements, little effect on the time it would take to mobilize, and no measurable effect on military recruitment."**

- **As NISBCO has argued for years, the report makes clear that during the critical early days of a war, "the Services would not be able to absorb a flood of inductees pumped into the training base."**

- **Moreover, the report adds, "with over one million trained members in Selected Reserve units, plus another 750,000 Individual Ready Reserve personnel, the capability already exists to augment the active forces substantially through the early days of a major conflict."**

- **Finally, the report states that "suspending peacetime registration could be accomplished with little risk to national security, considering the low probability of the need for conscription."**

## The Future of Peacetime Draft Registration

The 1994 DoD report on *Peacetime Draft Registration and the Selective Service System* established new emergency military manpower requirements which supersede the previous mobilization scenario involving a direct conflict with Warsaw Pact forces. This report calls into question any military need for ongoing draft registration. The highlights of that report are as follows:

- **The previous DoD requirement that SSS deliver the first inductee 13 days after a declared mobilization has been extended by six months, "because of the low probability of the need for a draft," as the report notes. Under the new scenario, the first inductees are to be delivered no sooner than six months plus 13 days after a declared mobilization.**

- **Most importantly, the report makes clear that health care personnel will likely be the first to be drafted in a national emergency. The Selective Service System maintains an on-the-shelf system which would provide for a "rapid post-mobilization registration of up to 3.5 million health care personnel in more than 60 specialties." The report states that "mass registration would occur in 13 days after notice to mobilize, with induction orders to follow 3 weeks later."**

- **The report adds that "this program also could be extended by six months, giving adequate time for development of training programs and for appropriate legislation prior to implementation."**

## Women and Draft Registration

The above-cited 1994 DoD report on peacetime draft registration opens the door for continued Congressional debate over whether women should be excluded from draft registration or the draft itself. During FY 1994, the report notes, the percentage of women recruits reached an all-time high of 16%. The report estimates that over the next five years, the number of women in active duty will reach almost a quarter of a million. The report notes that with the opening of more and more positions in the military to women, including combat and combat support positions, the success of the armed services "now depends on the participation of a great number of America's high quality young women."

The report further notes that much of the congressional debate surrounding the exclusion of women from draft registration "would be inappropriate today." Indeed, the report goes on to note that "other congressional findings would face similar scrutiny in today's more gender neutral force." In the unlikely event of a draft, the legality of the exclusion of women would be contested in the courts, moving almost immediately to the Supreme Court, which may be disposed to rule otherwise than it did in Rostker v. Goldberg, 101 S.CT. 2646 (1981). The opening of all but ground combat positions to women and the inclusion of women in the Health Care Personnel Delivery System would, in my judgement, make the inclusion of women in the draft inevitable.

## Unfairness to Conscientious Objectors

A significant number of conscientious objectors must choose between violating the law or violating their consciences. According to a Yankelovich poll sponsored by the Selective Service System, 20% of non-registrants are ideologically opposed to registration. Those who cannot register are threatened with severe criminal penalties (up to 5 years imprisonment and fines up to $250,000). Non-registrants are denied federal assistance for higher education (including the Pell, Perkins, and Stafford programs). In some states, they are banned from state universities altogether. They are also precluded from most employment by the federal government. NISBCO receives frequent calls from young men looking for alternatives to the federal aid which, for them, represents an unconscionable compromise of their deeply held beliefs. These penalties serve no national security purpose, and they should be ended.

## Fiscal Responsibility and the Selective Service System

The President's FY 1997 budget requests $23 million for Selective Service. As I noted earlier in my testimony, the Selective Service System has consumed over $400 million since registration began in 1980. That is, in anyone's book, "real money." And especially today, as Congress searches for ways to curb a burdensome deficit, it is even more unacceptable to dismiss this appropriation as "relatively low cost," as many have argued it is.

## Alternatives to Peacetime Registration

Selective Service System Director Gil Coronado stated in his 1995 oral testimony before this Committee that draft registration is Selective Service's "product," with all other agency activities supporting it. If cheaper and more efficient ways of producing this "product" were available, it goes without saying that they should be utilized.

Well, they do exist. There are alternatives to peacetime registration, which Selective Service itself has identified. The Health Care Personnel Delivery System requires that up to 3.4 million health care specialists be registered *en masse* 13 days after mobilization, with personnel arriving at DoD sites only forty-two days after mobilization for examination and induction. Written testimony submitted to this Committee by Selective Service last year notes that "the one-step, combined examination and induction automated data processing system and corresponding prototype forms and procedures have been completed."

A similar standby registration program could easily be devised by the Selective Service System utilizing existing technologies which permit immediate access of a wide range of up-to-date lists of draft age youth. Such an on-the-shelf system would save millions of taxpayer dollars a year. It would increase the personal liberty of young men, by freeing them of the onerous penalties for not registering and from the threat of prosecution.

## Conclusions

We are back at square one with draft registration and the Selective Service System. The emergency scenario involving a protracted war with the Soviet Union/Warsaw Pact, for which draft registration was intended to support, is no longer applicable. The argument that draft registration is cheap insurance and would save up to 6 months in delivering inductees is made moot by the new DoD requirements. The all-volunteer force is an overwhelming success. The civil liberties sacrificed by peacetime registration may be restored. The severe punishments for conscientious non-registration may be lifted.

Equally effective and less costly alternatives to peacetime registration are now available. The Selective Service System's product—peacetime draft registration—is now obsolete. There no longer is a market for this useless expenditure. We urge this Committee to terminate funding for the Selective Service System, and peacetime registration in particular.

## PREPARED STATEMENT OF DENNIS FLANERY, BOARD MEMBER, MISSOURI RURAL WATER ASSOCIATION

**Mr. Chairman and Members of the Committee,**

**Thank you for the opportunity to testify before the Committee on behalf of the National Rural Water Association, Missouri State Rural Water Association and the other 45 state rural water associations.**

**The purpose of our testimony is to urge your support for the continued funding of the Rural Water Training and Technical Assistance program which is authorized in the Safe Drinking Water Act and operates in forty-nine states. This program was funded for $8.5 million last year and provided for over 10,000 on site visits and trained over 39,000 people in every rural county in the country. It is the only program that has direct contact with the smallest community water systems where the impact of the Federal Safe Drinking Water Act regulations is the most costly.**

**The vast majority of water systems, 94%, are small, serving less than 10,000 people. The vast majority of noncompliance with the federal requirements, 90%, is in the same category. According to EPA's Small Town Task Force Advisory Committee, which was created by Congress to provide policy recommendation to the EPA Administrator, *"small towns are different from large towns - not just smaller."* The task force listed reasons for this observation including: *"small towns seldom have engineers or laboratories, there are few, if any training opportunities, local training usually does not exist, small towns, as a rule, have little or no professional staff, and small communities often lack political strength, both on the state and the national level"*. The Task Force recommended that, *"EPA must provide, where ever possible, expanded technical assistance.***

**Of particular importance in our request for funding this program is that the primary problem in implementing the Federal Safe Drinking Water Act is the ability of small systems to comply with the law. If small systems compliance is the major focus of the law then we urge the Committee to consider as a priority this funding for the one program that most effectively addresses that concern. There is overwhelming agreement that the only way to improve the compliance of small systems is to make direct on-site contact with operators, managers and local elected officials. The positive effect of these contacts is the heart of rural public health protection.**

**While small systems compliance with this SDWA is the main focus of the Rural Water Technical Assistance program, it is important to understand that the real long-term benefit of this program is the assurance of continuing local government control and responsibility for small and rural drinking water systems as opposed to more federal government intervention. Federal intervention and federal rules decrease the efficiency and increase the cost of small water system operations. If that is to be reversed there must be an alternative to federal regulations for protecting the public health. We believe that alternative is to consistently improve the capability of small systems through better management, improved equipment, expanded water sharing, reasonable consolidation and other efforts that make small systems more viable and less subject to national environmental regulatory intervention. This is exactly what on-site technical assistance carried out by each state rural water association accomplishes.**

**The best illustration of how this grassroots approach works is the rural water groundwater protection program. In the past, some environmental organizations and some Members of Congress have pressed for a federally mandated groundwater protection regulations. A federal program would expand EPA's role in land use decisions in every county in the country. The rural water program was created as an alternative to that idea. The innovative rural water approach pursues a more workable program that assists small water systems to become the catalyst for implementing wellhead/groundwater protection ordinances in their own communities. Local folks want to protect their groundwater but they need a little help to get started. This program has worked beyond everyone's best expectations - over 1,900 communities have or are adopting ordinances- in the 26 states participating in the program and it is spreading rapidly to cover other rural communities in these states. It has become the one new approach replacing any discussion of federal groundwater protection mandates.**

**This point is very important. Our belief that the only way to reduce federal environmental regulation is to develop an alternative approach for solving the environmental problems. In rural and small communities these alternatives can best be developed and implemented by the rural folks themselves. The primary mechanism for the, rural communities is to identify and focus on how to solve these problems has been the rural water training and technical assistance program. That is why we are urging the Committee to look at this program as its top SDWA priority. This program provides the core effort for a return of environmental management to the local elected officials. In this Congress, particularly, the objectives and activity of this program reinforces other Congressional efforts to reduce federal mandates and federal regulations.**

**The program is operated by the National Rural Water Association. We are a federation of state rural water associations - one such association exists in each state. The statewide membership of each association is**

comprised of small nonprofit water systems and small towns. All members have water supply operations as their primary daily activity. State membership averages about 300 systems from all geographic areas of each state. These are active members - who continuously participate in the training and technical assistance program in an effort to improve their drinking water. This program assists all small water systems whether they are members of the state association or not. With a significant turnover in water operators and board members, the need for training and technical assistance remains constant.

One very positive aspect of the program has been the interest in states and even EPA regional offices to expand the program in individual states when additional funds are available. There are 17 additional full-time persons funded to do this same work from other funding sources. For example, four additional Florida Rural Water Association in-the-field staff are paid for with state funds, Region V has funded a special drinking water program for schools in Michigan and a number of state associations are using energy efficiency funds to help systems reduce water loss. All these efforts are interrelated with the EPA program funded by this Committee. In addition, a growing number of states are creating new grant and loan programs to finance rural water systems to assist in upgrading them to meet SDWA requirements. Again, it is this EPA funded program that has become a catalyst in state after state for innovative and broad ranging efforts to improve drinking water facilities. To make this work the program provides the following framework for water system assistance:

* frequent training sessions covering a variety of rural water subjects in all rural areas of a state
* a minimum of 200 on-site technical assistance hours each year
* border-to-border contact with all rural water systems in each state through a state rural water association office
* monthly or quarterly newsletters with simple advice for improvement of water system operations, as well as a very clear description of changing EPA standards for SDWA compliance
* immediate on-site assistance for any small system in the state expressing operation or management difficulties by contacting the state rural water association office
* coordinated rural water system efforts within a state to press for increased state and local funding which reduces demand on FMHA grants and loans
* cooperation from all small water systems with EPA and state regulatory personnel which allows them to deliver their message and monitor the level of effort for SDWA compliance among small water systems

The number of participants in the training sessions continues to increase as do the number of rural water systems actively participating in the overall state association programs. For example annually, state associations conduct approximately 800 workshops and provide training for 39,000 rural water operators and other personnel representing 17,000 water systems nationwide. Over 11,000 technical assistance on-site hours, including visits for serious compliance problems with the Safe Drinking Water Act, were also carried out and were normally the only hands-on assistance provided to these systems to help them meet the requirements of the Safe Drinking Water Act.

This is an important time in the evolution of federal environmental protection programs. The Congress is using existing programs to determine how to reduce federal mandates by turning over more responsibility to local governments. We urge the Committee to review the Rural Water Training and Technical Assistance program in this light. This program is national in coverage but local in operation and implementation. It provides clearly documentable accomplishments in the number of systems assisted and local groundwater ordinances adopted. In short, it is local, fully documented, and it addresses the number one priority in the SDWA - small community and rural water systems.

This year for the first time EPA has requested funding for the operation of the program next year. We believe that this is particularly significant because it illustrates support for the small community environmentally protective approach set forth by the Committee over the past few years. We strongly urge you to continue to fund the program. We are asking that $12.5 million be included for the overall rural water programs so that $2.0 million can be used to expand the groundwater protection program to all states - with two people allocated to the three largest geographic states.

Thank you very much for your past support. We have tried to make this the best program this committee appropriates money for and we will do the same next year if you will continue our funding.

### MO Rural and Small Communities Receiving On-Site Technical Assistance in 1995

JEFFERSONCOUNTY
JACKSONCOUNTY
PULASKICO
TANEYCO
ADVANCE
ALBANY
ALTON
ANDREW
BOURBON
BOWLINGGREEN
BRANSON
BRANSON
BUFFALO
BUTLER
BUTTERFIELD
BARTONCOUNTY
COLECOUNTY
COLECOUNTY
CONCORDIA
COOTER
CREIGHTON
CROCKER
CUBA
DAVIESS
GALLATIN
GARDENCITY
GERALD
GIDEON
GLASGOW
GOODMAN
GRANBY
GREENECOUNTY
KNOBNOSTER
LAMONTE
LACLEDECOUNTY
LACLEDECOUNTY
LAKELAFAYETTE
LAKEWINNEBAGO
LAMAR
LAMONTE
MONETT
MONTAUKSTATEPARK
MONTGOMERYCOUNT
YMONTGOMERYCITY
MOREHOUSE
MTGROVE
MT.VIEW
MT.VERNON
PERRY
PERRYVILLE
PHELPSCO
PHELPSCO
PIEDMONT
PIERCECITY
PIKECOUNTY
PILOTKNOB
RIPLEYCOUNTY
STE.GENEVIEVE
STODDARDCTY
TANEYCOUNTY
WAYNECOUNTY
BOONECOUNTY
CASSCOUNTY
JACKSON

ANNAPOLIS
ANNISTON
ARBYRD
ARCADIA
ASBURY
AUDRAIN
AUXVAUSSE
AVA
BARTON
BELLE
BERNIE
BETHANY
BILLINGS
BIRCHTREE
BISMARCK
BLAND
BLOOMSFIELD
BOGARD
BOLIVAR
BOONE
BOONECOUNTY
LAFAYETTE
CABOOL
CALHOUN
CALLAWAY
CALLAWAYDISTRICT
CAMDENCO
CAMDENTON
CAMERON
CAMPBELL
CARDWELL
CARLJUNCTION
CARROLL
CARTER
CARTERVILLE
CASS
CASS
CASSVILLE
CLARKTON
CLEVER
CLINTON
CLINTON
DESOTO
DIAMOND
DIGGINS
DIXON
DONIPHAN
DOOLITTLE
DUDLEY
DUNKLIN
DUNKLIN
EAGLEVILLE
EASTPRAIRIE
EMERALDBEACH
EXETER
FAIRFAX
FAYETTE
FISK
FORDLAND
FORSYTH
FREEMAN
FREISTATT
GAINSVILLE
GREENVILLE
GRUNDY
HALLSVILLE
HAMILTON
HARRISON
HARTVILLE
HOLCON
HOLLAND
HOLLISTER
HOUSTON
HOWELL
HUNTSVILLE
IRONDALE
IRONTON
JACKSONCOUNTY
JAMESON
JASPER
JASPER
JEFFCO
JOHNSON
JONESBURG
LATHROP
LAURIE
LEADINGTON
LEETON
LIBERAL
LICKING
LILBOURN
MAITLAND
MALDEN
MANSFIELD
MANSFIELD
MARSHFIELD
MARTINSBURG
MATTHEWS
MAYSVILLE
MILLSPRING
MILLERCOUNTY
MILLER
MINDENMINES
MINER
MONETT
MT.VIEW
NAYLOR
NEELYVILLE
NEOSHO
NEWFLORENCE
NEWFRANKLIN
NEWMADRIDCOUNTY
NEWFLORENCE
NEWFRANKLIN
NEWBURG
NIXA
NORTHJEFFERSON
NORWOOD
ODESSA
OREGONCOUNTY
ORONOGO
OSBOURN
OWENSVILLE
OZARK
OZARK
PECULIAR
PINEVILLE
PLATTSBURG
PLEASANTHILL
POLO
POTOSI
PULASKICOUNTY
PULASKICOUNTY
PULASKICOUNTY
PURDY
PUXICO
DUNKLINCOUNTY
GRUNDYCOUNTY
HENRYCOUNTY
HOWARDCOUNTY
JOHNSONCOUNTY
LAFAYETTECOUNTY
MONTGOMERYCTY
MORGANCOUNTY
PEMISCOTT
PULASKI
RALLSCOUNTY
JACKSON
AUDRAINCTY
BUTLERCOUNTY
CALDWELL
CAMDEN
HARRISONCOUNTY
HENRYCOUNTY
LAFAYETTECOUNTY
PHELPSCOUNTY
PULASKICOUNTY
PIPLEYCOUNTY
BUTLERCOUNTY
CLINTONCTY
FRANKLIN
HENRYCOUNTY
JOHNSONCOUNTY
CLINTONCOUNTY
HENRYCOUNTY
STODDARDCTY
JEFFERSONCTY
CASS

BOONECOUNTY
DENT
CARTERCOUNTY
CARROLLCOUNTY
CAPE/PERRY
BUTLERCOUNTY
BOONECTY
AUDRAINCTY
NEWTONCO
JACKSONCOUNTY
PHELPSCOUNTY
STCHARLESCOUNTY
TANEYCO
TEXASCOUNTY
QULIN
REEDSSPRING
REPUBLIC
RIDGEWAY
RIPLEY
RIPLEY
ROCKAWAYBEACH
ROCKPORT
ROGERSVILLE
SALEM
SAVANNAH
SCHELLCITY
SENECA
SEYMOUR
SKIDMORE
SPARTA
STROBERTS
STCLAIR
STJAMES
STMARYS
STAFFORD
STANBERRY
STEGENEVIEVE
STEGENEVIEVE
STEELE
STEELVILLE
STELLA
STODDARD
STODDARDCOUNTY
STOVER
STRAFFORD
SULLIVAN
SUNRISE
TANEYCOWATER
TARKIO
TEXASCOUNTY
TEXAS
TEXAS
THAYER
THOMASHILL
TRAVEL/WILLOW
TRENTON
TRUESDALE
UNION
URBANA
URICH
VANBUREN
VERNONC
VIBURNUM
VIENNA
WARRENTON
WARSAW
WASHINGTON
WASHINGTON
WAVERLY
WAYNE
WAYNESVILLE
WEBBCITY
WELLSVILLE
WENTZVILLE
WHEATON
WILLOWSPRINGS
WINDSOR
WINONA
WRIGHTCOUNTY
WRIGHTCITY

**Examples of MO Rural and Small Communities Receiving On-Site Technical Assistance**

Mayview: The City of Mayview is located in Lafayette County and serves 85 connections. GayeCox, the system's full time, certified operator, requested assistance from the MissouriRural Water Association Wastewater Technician. The system was out of compliancedue to heavy algae growth. Also, the total suspended solids were above the allowablelimits. The Wastewater Technician suggested the lagoon water level be lowered to apoint of a 30 day flow containment. He also recommended the operator apply coppersulfate (cusoa) at the rate of 1.0 ppm or 10 pounds/acre at a water depth of 3 feet. The Technician suggested a 6" valve be installed in discharge opening at four feetorifice, so as to operated lagoon at six foot level. The Wastewater Technician plansto help install the valve in the system when it arrives. As a result of this contact, thecopper sulfate will reduce the algae index, thereby bringing the facility back intocompliance. By installing the gate valve in high water level, the discharge orifice willprovide more containment area to the lagoon and will create more flexibility for theoperator's chemical application program. If the system is kept in compliance, costlyupgrading may be avoided, thus saving the system money in the future.

Rockport: The City of Rockport is located in Atchison County and serves 825 connections. The systemtreats ground water that is pumped across town to the city reservoirs and also to anotherlocation across town to an elevated tower. The city's problem started when they allowed afertilizer plant to upgrade their batch plant, which included a four inch service connectionto serve this facility. The city operates two different pressure zones throughout town, a lowand a high pressure system. Because the fertilizer plant's connection was going to beconnected to an eight inch main, which maintains a static pressure of 150 psi, the citythought they could provide service without interrupting the rest of the system. After theconnection was made, it was discovered that when the fertilizer plant was in operation, thenursing home located one mile away was experiencing a negative pressure on their system.This could potentially cause a back siphon to occur, causing the nursing home to go onmandatory boil water order for several days. Knowing this was a serious potential healthconcern to the nursing home and the customers of the city, the Circuit Rider from theMissouri Rural Water Association was contacted. The Circuit Rider developed a plan toflow test the high pressure system, which could be used by an engineer for the purpose ofdesigning a looped distribution system to alleviate this problem. The flow testing wascompleted with the information needed to solve this problem. Also a temporary measurewas discussed to solve the problem of the nursing home having a negative pressure and wasto be examined. By providing the flow test, the engineers have the tools they need toachieve the proper design of a looped system. After the project is completed, the backflowthreats of the nursing home will be solved, saving possible system contamination. Therewas also valuable information learned on the performance of the hydrants tested andhydrants that were needing maintenance and repair work.

Penerman: The City of Penerman is located in Stoddard County and serves 37 connections. The system has residential units served by acollections system, lift station, and three cell lagoon. The Missouri Rural Water Association Wastewater Technician visited the systemand reported that there was no fence around the site, trees were growing inslope of berms, catwalks were badly in need of repair,division boxes in need of repair, flow-a-wat ditch was plugged, berm deterioration from burrowing animals and weeds had not beenmowed. Collected samples from lab revealed one required parameter had not been reported on. Additional samples were collected. The Technician met with the Board and suggested reorganization plan, possible operator and means of correcting problems. If actionis taken and the plan is followed, the system could save as much as $20,000.

# PREPARED STATEMENT OF THE NAVAJO NATION

## INTRODUCTION

Mr. Chairman and Members of the Subcommittee, the Navajo Nation appreciates the opportunity to present our views and recommendations regarding the Fiscal Year 1997 budget proposal for the Department of Veteran's Affairs, Housing and Urban Development and Independent Agencies. This statement highlights several of the Navajo Nation's priorities for FY 1997 appropriations.

At the outset, the Navajo Nation appreciates your attention to the Navajo Nation's needs in the past years. We look forward to the continuation of our good working relationship with the Subcommittee.

## THE NAVAJO NATION

Spanning Arizona, New Mexico and Utah, the Navajo Nation encompasses 17.5 million acres--one-third of all Indian lands in the lower 48 states--and is larger than the states of Connecticut, Delaware, Maryland, Massachusetts, and Rhode Island combined. However, unlike these states, the Navajo Nation is home to the poorest of America's rural poor. While the average unemployment rate in America is 5%, the unemployment rate on the Navajo Nation averages between 38% to 50%, depending on the season. Over 56% of the Navajo people live in poverty. Per capita income averages $4,106, which is less than one-third of that in the surrounding states. Less than 30% of the Navajo population is afforded the chance to enjoy basic amenities such as plumbing, adequate kitchen facilities, and telephone services. Our paved roads comprise only 22,2000 miles. The state of West Virginia, which is approximately the same size as the Navajo Nation and is of a similar rural character has 18,000 miles of paved road. Until recently, we had just three banking facilities within our entire 27,500 square mile area.

## DEPARTMENT OF VETERANS AFFAIRS

The U.S. Department of Veterans Affairs (DVA) provides a variety of services and benefits, such as health care, housing, and burial benefits to veterans. Many Navajo veterans do not currently receive these benefits and services due to the inaccessibility and unavailability of these benefits. Many Navajo veterans served their country in World War II, Korean Conflict, Vietnam War, and the Persian Gulf War and as a result some are currently suffering from Post Traumatic Stress Disorder (PTSD) and the Gulf War Syndrome.

### Veterans Readjustment Counseling Program

The Navajo Nation requests that funding be provided to establish a community-based Navajo Veterans Readjustment Counseling Program to serve Navajo veterans afflicted with PTSD. Studies authorized by Congress have determined that Native Americans suffer higher rates of PTSD than Anglos, Blacks and Hispanics. As such, they suffer higher rates of alcohol and substance abuse and higher rates of unemployment which contributes to deteriorating health, family and social problems. The nearest DVA hospital is located 335 miles from the Navajo reservation and is not easily accessible and available. A readjustment counseling program on the Navajo reservation would provide Navajo veterans modern and traditional counseling. It would also provide referral for Navajo traditional healing ceremony assistance, alcohol and drug abuse counseling, and benefits counseling.

### Assistance relating to Veterans' Cemeteries

The Navajo Nation strongly requests that Congress amend Title 38 USC, Section 2408(a), to make Indian tribes eligible for assistance for veterans cemeteries. The law as currently written, makes grants only to States to assist them in establishing, expanding, and improving veterans' cemeteries. This amendment will allow Indian Nations to access such grants. It would also provide an opportunity for Navajo Nation to establish its own veterans cemetery for its deceased warriors. The Navajo people believe in burying their warriors with dignity and honor within our own four sacred-mountains.

### Native American Direct Home Loan Program

The five-year pilot program to make direct housing loans to Native American veterans living on trust lands, pursuant to P.L. 102-547, expires on September 30, 1997, which will result in no more loans to Native American veterans under this authority. Navajo Nation strongly recommends that this program either be extended or made permanent. DVA will not extend the program without statutory authority. Navajo Nation also recommends that the maximum amount be increased to an amount comparable to the original Home Loan Guaranty program.

### Employment and Training Program Grant

In The Navajo Nation requests that direct funding be provided to meet the employment and training needs of the Navajo veterans. Funding will be used to provide class-room training, on-the-job training, job counseling, vocational training for untrained and under-employed Navajo veterans with the goal of providing new skills that result in a steady long-term employment. Currently, there are competitive grants available through the U.S. Department of Labor but requires grant and proposals writers to go after those funds. The Navajo Department of Veterans does not currently have the financial resources to hire grant and proposal writers.

## HOUSING AND URBAN DEVELOPMENT

### Navajo Housing Authority

The Navajo Housing Authority (NHA) is the largest housing provider on the Navajo Nation. It has 6,518 units under management, 369 units under development, and 702 units in planning stages. NHA services low and very low income Navajos. Funding for NHA is received from the United States Department of Housing and Urban Development (HUD). This source of funding must continue in order to address the high demand and critical need for housing on the Navajo Nation.

In order for NHA to provide minimum services to the Navajo people we will need $12,000,000 in operating subsidies, $35,000,000 for development activities, and $25,000,000 for modernization activities for FY 1996 and FY 1997. Any reduction in these amounts will have adverse affects on the Navajo people and economy.

NHA urges your support of the Native American Housing Assistance and Self-Determination Act of 1996, sponsored by Rick Lazio (R-NY) of the House of Representatives' Housing and Community Opportunity Subcommittee. One area of major concern is the proposed appropriation of $650 million, which is grossly inadequate to meet the housing needs of over 500 Indian tribes. NHA requests that consultation with the Navajo Nation continue through out the process of any legislation which impacts the Navajo people, including the Lazio legislation.

### HEARTH Program

The Navajo Nation requests for the continuation of current funding from the U.S. Department of HUD in the amount of $2,000,000 for the HEARTH program, which provides housing assistance to elderly and handicapped Navajos. Funds appropriated from FY '95 have been distributed to the five (5) Navajo Housing Services Department agencies throughout the reservation. Construction of the HEARTH projects, however, have been temporarily halted due to pending clearances by HUD and the Navajo Environmental Protection Agency (NEPA).

The HEARTH program has a very important role in providing housing services to our Navajo elderly and handicapped citizens. Statistics demonstrate at least fifty percent (50%) of Navajo people live in remote areas without electricity and running water. Approximately seven percent (7%) of the population is sixty (60) years old or older and at least ten percent (10%) of the Navajo population is considered handicapped. For many of these people, the HEARTH program is the only hope for housing improvements which make comfortable accommodations for their special needs.

### HOME Program

The Navajo Nation requests $1,500,000 to continue constructing 46 new housing units and rehabilitating 175 homes throughout the reservation. The HOME program, authorized by the Home Investment Partnership Act, provides funds to Indian tribes to expand the supply of affordable housing for the very low-income Navajo people. This program is designed to assist persons and/or families who are in extreme need of affordable housing and who are willing to accept financial obligations and responsibilities involved with purchasing a home. The goal of this program is to provide affordable housing which is independent of the "hand-out" method.

### HOPWA Program

The Navajo Nation requests $1,000,000, through the Housing Opportunities for People Living With AIDS program, to provide housing and support services which would reduce the costly and unnecessary hospitalization of Navajo people living with AIDS. The Navajo Nation AIDS Office has experienced an increase in number of requests related to housing opportunities. However, with minimal funds, allocated primarily for prevention purposes, the Office can only refer these requests elsewhere. As a result of the increase in the number HIV/AIDS cases on the Navajo reservation, people are forced to move off the Navajo reservation in order to receive adequate health care services and housing opportunities. The Navajo Nation AIDS Office then absorbs the cost of transportation and eventually the burial expenses for their clients. Many of the clients would like to

## PREPARED STATEMENT OF MITCHELL MOSS, DIRECTOR, TAUB URBAN RESEARCH CENTER

Mr. Chairman and Members of the Subcommittee, I appreciate the opportunity to present testimony on behalf of New York University (NYU). New York University's Taub Urban Research Center is seeking $750,000 from the U.S. Department of Housing and Urban Development to support planning for the economic and physical development of the low-income communities situated in the Southeast Queens and Rockaways in the City of New York.

The Taub Urban Research Center at NYU's Robert F. Wagner Graduate School of Public Service would be of enormous help to Southeast Queens and the Rockaways, which has a considerable population that resides in households with incomes below the poverty level. Currently, there is a strong need to attract public and private investment in the Rockaways, a beautiful waterfront area that has been neglected and allowed to deteriorate over the past two decades. New York University has expressed its commitment to work with community organizations to stimulate the development of the Rockaways with housing, commercial activities, and the recreational facilities that can enhance the local community and improve the quality of the area for all New Yorkers.

New York University intends to formulate and analyze economic and physical development initiatives in Southeast Queens and the Rockaways. The NYU team will formulate strategies in response to specific problems or opportunities; identify mechanisms to attract private investment for housing, commercial activities, and community-based enterprises; and develop plans that examine the impact of emerging demographic trends on the need for essential public services.

New York University is superbly qualified to carry out this project. For example, the Taub Urban Research Center has recently completed a report for the New York State Urban Development corporation on the role of small businesses in urban communities. The Wagner Graduate School of Public Service is currently conducting a project on the role of Head Start in improving educational performance in low-income communities throughout New York City.

New York University's Taub Urban Research Center has also worked extensively on the role of air transportation in urban economic development. In view of the proximity of John F. Kennedy Airport, NYU will examine ways to improve aviation-related jobs that can help Southeast Queens and the Rockaways communities.

This project is consistent with congressional efforts to foster public-private collaborations to achieve policy objectives. The NYU initiative provides an excellent opportunity to develop a model program for community and university partnerships.

New York University respectfully requests consideration as a special project under the U.S. Department of Housing and Urban Development. We seek $750,000 to initiate the renaissance of the Rockaways community, and to establish a model for a mutually beneficial university-community relationship to rebuilt America's urban centers.

Thank you for your time and consideration of NYU's request. We hope you will agree that this project merits federal support.

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## PREPARED STATEMENT OF BILL FRANK, JR., CHAIRMAN, THE NORTHWEST INDIAN FISHERIES COMMISSION

Mr Chairman, and honorable members of the Committee, I am Bill Frank, Jr., Chairman of the Northwest Indian Fisheries Commission (NWIFC) and on behalf of Washington State tribes I would like to thank you for the opportunity to offer written testimony concerning the Environmental Protection Agency's (EPA) FY-1997 appropriations.

We are specifically requesting that programmatic funding levels to the Northwest tribes be included in EPA's budget under Section 104(b) (3) of the Clean Water Act. The purpose of our request is to continue implementation of the model Coordinated Tribal Water Quality Program for twenty-six tribes and tribal organizations in Washington State for fiscal year 1997. Strong congressional support for and implementation of the tribal program began in 1990 and is present today. It is essential that it continues into the future.

We respectfully request Congress to either:

(1) **Appropriate $2.5 million into the EPA's funding base**

Under Section 104(b) (3) of the Clean Water Act or EPA's Assessment and Watershed Program appropriate $2.5 million into EPA's funding base for twenty-six (26) tribes and tribal organizations in Washington State to fully implement the model cooperative tribal water resource program for environmental protection; OR

(2) **Direct the Agency to utilize existing $2.5 million in agency funding**

From existing Section 104 (b) (3) of the Clean Water Act or EPA's Assessment and Watershed Program funds, provide $2.5 million for twenty-six (26) tribes and tribal organizations in Washington State to continue implementation of the model cooperative tribal water resource program for environmental protection.

*Justification for this funding request is based on:*

1. *legal rights and obligations for the federal government to protect the treaty-reserved rights of the tribes,*
2. *the United State's trust responsibility to protect the health and environment of the tribes on a government-to-government basis, and*

3. *cost effectiveness by utilizing a cooperative intergovernmental strategy to accomplish national clean water goals.*

To assist the Committee members, I would like to summarize background relevant to our request.

## BACKGROUND

The NWIFC request is on behalf of our nineteen (19) member treaty fishing tribes and the Hoh, Chehalis and Shoalwater Bay Tribes in western Washington, and the Yakama Indian Nation, Colville Confederated, Spokane, and Kalispel tribes in eastern Washington. The funding request is to continue the model Coordinated Tribal Water Quality Program that began in 1990.

Washington State has been blessed with bountiful rivers and streams. Five species of Pacific salmon and three species of anadromous trout utilize Washington State's streams during the fresh water stages of their life cycles. Historically, there were ample supplies of fish for ceremonial, subsistence, commercial and recreation purposes. Old growth conifer removal, riparian zone impacts, farming activities, and channelization of the streams has reduced the productive capacity of these streams to extremely low levels. Currently, there are concerns that hundreds of salmon stocks are at significantly low levels and may warrant a threatened or endangered listing status under the Endangerd Species Act.

In 1979, the United States Supreme Court re-affirmed the treaty tribes' right to harvest half of the harvestable number of anadromous fish passing through tribal usual and accustomed areas. In 1980, the federal district court held that the United States and the State of Washington must not permit degradation of fish habitat which would diminish the treaty harvest right, including point and nonpoint pollution sources. The federal courts have recognized that protection of water quality and other attributes of fish habitat are necessary to secure the Constitutionally protected rights of the tribes to harvest fish.

The sovereign authorities of the Tribes and the legal principles enunciated in United States v. Washington and other federal court decisions support justification upon which the tribes are involved with on and off - reservation environmental issues. As a result of federal court decisions, the state of Washington has recognized the tribes as "co-managers" of the fish resource and water quality in our state. As co-managers in Washington, the tribes must have the resources to adequately participate in environmental protection programs.

The Environmental Protection Agency's (EPA) Indian policy (1984) of working with federally recognized tribes on a government-to-government basis concerns more than 375 Indian tribes in the lower 48 states controlling over 52 million acres of land base. In our state, tribal reservations make up approximately six percent (6%) of the State of Washington. Our tribes also have retained treaty rights not ceded to the United States. These usual and accustomed fishing grounds include most of the State of Washington. The combined area of these Indian reservations is larger than all of New England, yet EPA now devotes only a tiny fraction of its personnel and funds to environmental protection for the tribes.

This is clearly a discriminatory prioritization of federal funds. On a national level, tribal reservations represent three percent (3%) of the land base of this nation. Even though the EPA has worked closely with the states to implement adequate environmental programs, little has been done to accomplish the same for the tribal governments. Indian tribes are over two decades behind the states both in resources received from the EPA and in technical assistance provided by the EPA in developing tribal water program offices. A "front end" investment will promote cooperation and increased tribal involvement in environmental protection as has been the case between the EPA and state governments for the past twenty years.

We want it to be recognized that we do support and appreciate the successful efforts that have been made to increase the EPA General Assistance Program for tribes. We see this as an important and positive step, but believe that it still falls short of the environmental protection needs in Indian Country. The increased General Assistance Program (GAP) will be able to fund approximately 200 tribes at rudimentary levels on a yearly basis. But since the GAP funding is legislated for program development, there must be complimentary sources of implementation funding for these tribal programs. One such possibility may be within Section 319 of the Clean Water Act. However, because of legislated formula, the $100 million available nationally translates only into $300,000 (1/3 of 1% restriction) for tribal programs. This means that 535 tribal governments (including Alaska Native Villages) must compete for a very small pool of tribal nonpoint source pollution management program funds. Another such possibility for long term program implementation is Section 106 of the Clean Water Act. Currently, this program has $82.5 million available nationally, with $5 million available to support tribal programs. However, these funds are limited to on-reservation management programs, which are but one aspect of our Coordinated Water Quality Model Program. Clearly, a means must be found to support the long term funding for tribal programs that seek to protect tribal treaty rights such as ours, or the efforts being made by EPA will not be successful.

## TRIBAL/STATE ROLES

Beginning in 1990, the State of Washington has supported tribal involvement in environmental protection both off and on-reservation. (The state was committed to work with the tribes on a government-to-government basis as "co-managers" of the water resource in the implementation of this program.) The federally recognized Indian tribes in Washington have developed a process with state, local government officials, and representatives of agriculture, industry, and environmental communities to address water resource issues on a government-to-government basis. The results of these discussions have outlined a cooperative process between the tribes, state agencies and programs, and local units of governments in areas of environmental protection. This process was highlighted as a case study example to countries around the world at the 1992 United Nations Conference on Environment and Economic Development in South America

The tribes must be part of the solutions to prevent and control water pollution in Washington State. The tribes must participate in these activities to protect their governmental interests and treaty fishing rights. Neither we, nor the resources, can afford to lose programs integral to our intergovernmental cooperative watershed program. The Cooperative Tribal Water Quality Program is one such means to protect our nation's environmental heritage

## CONCLUSION

For the past five years, Congress has recognized the importance of the Coordinated Tribal Water Quality Program and supported the funding necessary for the tribes to participate in environmental programs which helps EPA realize its long-range objective of including tribal governments as partners in decision-making and program management on reservation lands. Adequate and stable funding is necessary to maintain the coordinated tribal environmental program.

We appreciate the difficulty Congress is facing in making decisions for this next fiscal year. In the case of the EPA, Congress and the Administration will probably direct their resources to address those areas of highest risk to human health and the environment. Therefore, we want to reiterate that tribal reservations and protection of their treaty resources have not been adequately addressed for the past twenty (20) years and represents the highest of risks.

Sufficient and permanent funding is necessary to continue the tribal cooperative program. Certainty of funding is necessary for the tribes to hire permanent and professional staff to implement this program. Without an ongoing investment by Congress much of the good that has been accomplished to date will be lost.

remain on the reservation with their family and relatives, but the Navajo housing crisis prevents many from doing so. The Navajo Nation AIDS Office looks forward to working with the Housing Opportunities for People Living With AIDS program to assist in meeting our needs.

## ENVIRONMENTAL PROTECTION AGENCY

The Navajo Nation Environmental Protection Agency ("Navajo EPA") is designated by the Navajo Nation Council to regulate activities that affect the quality of air, water, and environment for the Navajo people and the Navajo government. The programs of the Navajo EPA are administered across the Navajo Nation. The regulatory and enforcement authority of the Navajo EPA and its programs covers the air, water, and lands in the territorial jurisdiction of the Navajo Nation. Where a particular Navajo program has not yet developed enforcement and regulatory capabilities, the federal U.S. Environmental Protection Agency acts on behalf of the Navajo Nation.

### Clean Air Act

The Navajo Nation requests **$322,500** for the Air Quality Control Program. These funds will be used to develop the air quality laws and regulations, and to establish compliance, enforcement, and permitting programs to regulate air pollution sources within Navajo lands. Additionally, the Navajo Nation Council has formally adopted the Navajo Nation Air Pollution Prevention and Control Act.

### Safe Drinking Water Act

The Navajo Nation requests **$200,000** for Underground Injection Control (Groundwater Pollution Control Program). These funds will be used to protect underground sources of drinking water from contaminants and hazardous wastes that are injected into underground wells. Navajo EPA has been able to inspect injection wells, issue notices of violation, and monitor unlined pit closure activities.

The Navajo Nation also requests **$250,000** for the Public Water Systems Supervision Program. These funds will be used to ensure that the management of all public water systems of the Navajo Nation are safe for human consumption. The Navajo Nation Council adopted the Navajo Nation Safe Drinking Water Act. The Public Water Systems Supervision Program has formally applied for primary enforcement authority from the U.S. EPA, Region 9, for full delegation of a public water system supervision program.

### Clean Water Act

The Navajo Nation requests **$150,000** for the Water Pollution Control Program. These funds will be used to ensure that the waters of the Navajo Nation attain, support, and maintain the designated uses of these waters. The Navajo Nation has completed a Baseline Water Quality Assessment, a Draft Non-Point Source Pollution Management Plan, and a Draft Navajo Nation Water Quality Standards and Planning Act.

The Navajo Nation requests **$175,000** for the National Pollutant Discharge Elimination System ("NPDES"). These funds will be used to acquire EPA authority for the NPDES, Pretreatment and Sludge Management Programs. The Navajo Nation Pollution Elimination System Act is currently in the tribal review process for final adoption by the Navajo Nation Council.

### Solid Waste Disposal Act

The Navajo Nation requests **$231,369** for the Resource Conservation and Recovery Act Program. These funds will be used to develop a tribal hazardous waste code and regulations for facilities that generate, treat, store, transport and dispose of hazardous waste. These funds will also be used to conduct hazardous waste compliance inspections, identify hazardous waste violations, implement enforcement actions, and monitor facilities' return-to-compliance activities.

The Navajo Nation also requests **$100,000** for the Underground Storage Tanks Program. These funds will be used to develop and implement the Navajo Nation Underground Storage Tank compliance and monitoring program to protect the soil and groundwater from potential contamination by leaking underground storage tank systems containing petroleum and other hazardous waste.

The Navajo Nation requests **$200,000** for the Pollution Prevention Program. These funds will be used to prevent pollution through source deduction, recycling, proper treatment and environmentally responsible disposal. The Navajo Nation has developed educational program promoting pollution prevention and waste minimization. Navajo EPA intends to institutionalize the Multi-Media/Pollution Prevention as an environmental management priority by identifying regulatory and non-regulatory barriers and providing direct technical assistance to businesses.

### Toxic Substance Control Act

The Navajo Nation requests **$200,000** for the Asbestos Program. These funds will be used to develop and implement the Navajo Nation's asbestos compliance and monitoring program for the protection of human health and the environment. The funds will also be used to develop a tribal code and regulations and for case development and enforcement activities.

### Superfund

The Navajo Nation requests **$200,000** for the Superfund program. These funds will be used to continue activities for the CORE Program Cooperative Agreement and the Multi-Site Program Cooperative Agreement as authorized in the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), as amended by the Superfund Amendments and Reauthorization Act of 1986, including the finalizing the CERCLA - Draft Hazardous Substance Code, drafting regulations, scoping a voluntary clean-up program, and establishing a revolving fund for cost recovery.

### Indian Environmental General Assistance

The Navajo Nation requests **$120,000** for the Indian Environmental General Assistance Program. These funds will be used to develop and implement environmental codes and regulations for those Navajo Nation environmental programs which do not already have funding place and to coordinate efforts between programs and various agencies. The Navajo EPA is developing several environmental regulating programs. The General Assistance grant funds will be used to supplement on-going programs where it is appropriate and to develop new and innovative program to strengthen Navajo enforcement efforts.

## CORPORATION FOR NATIONAL AND COMMUNITY SERVICE - AMERICORPS

The Navajo Nation strongly requests continued assistance for grants to the National and Community service budget. The Navajo Nation, a participant in the AmeriCorps program, provides service opportunities for Navajo high school and undergraduate college students through the Navajo Nation AmeriCorps program. The program consists of natural resources improvement (i.e. ecosystem-based watershed resources restoration), community revitalization, and interaction with students in grades K-12. Fiscal Year 1995 is the first year that the Navajo Nation has been funded.

The Navajo AmeriCorps program, now into its second year, has made tremendous strides into providing community service on the Navajo Nation. The Navajo Nation is distinguished as one of the poorest areas in the United States, with levels that exceed the national rates relative to unemployment, high school dropouts, teenage pregnancy, alcoholism and substance abuse. The Navajo AmeriCorps program provides a vital opportunity for Navajo students to further their education. This program is unique, for it presents an outstanding career and personal development opportunity.

## CONCLUSION

The Navajo Nation thanks Chairman Bond and the Members of the Subcommittee for their leadership and support of these programs. Detailed justification sheets on these and additional projects will be provided to the Subcommittee staff shortly.

Please consider our request for $2.5 million for the Washington State Tribal Water Quality Program. Once again, thank you for the opportunity to provide testimony. Thank you also for your assistance in helping to develop a national model program of how tribal governments can address environmental protection in a cooperative watershed approach with state and local governments.

Thanks to this committee, we are making significant progress. This initiative is being supported at all levels of our governments. We hope you and the committee will continue to look favorably on our request.

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## PREPARED STATEMENT OF HON. JOE SERNA, JR., MAYOR, CITY OF SACRAMENTO

Mr. Chairman, Members of the Subcommittee:

I am submitting this testimony on behalf of the citizens of the City of Sacramento, California, to seek your assistance with funding from the FY 1997 VA, HUD and Independent Agencies Appropriations bill to improve the City's combined sewer system (CSS). Specifically, we respectfully request an appropriation of $10 million in the Environmental Protection Agency's State and Tribal Assistance Grants account to assist us in completing the engineering design and implementation of the first phase of this project. This funding would be cost-shared by the City. Federal assistance is essential to help the City develop this innovative solution to its combined sewer overflow problem and substantially mitigate the already dramatic increases in residential and commercial water and sewer charges needed to fund the project.

Sacramento's combined sewer system conveys stormwater and sanitary sewage in the same pipelines. The system, parts of which are over 100 years old, drains the City's waste and stormwater into pumping stations which transport the sewage to treatment plants before being released into the Sacramento River. The CSS consists of sewers and storage and treatment facilities. Its pipelines are constructed of laid brick, clay and concrete, contains over 306 miles of pipe, and, during dry weather, transports up to 60 million gallons of water each day. Over 7,000 acres of the City's homes and businesses are served by the system and over 110,000 people use the system daily.

We understand the significant budget constraints under which the Subcommittee is operating. We are making this appeal to you because, in short, the City's combined sewer system has reached its breaking point. The City must begin implementing its Combined Sewer System Improvement and Rehabilitation Program immediately although it is acknowledged that the Program, without active federal participation, will place large strains on City services, harm the area economy and inflict hardship on our citizens. Let me explain the current situation.

During major storms when the CSS's collection system conveyance capacity is exceeded, pipelines are surcharged and combined wastewater flows back out of pipelines on to low-lying streets and basements of houses and buildings.

As well, combined sewer overflows (CSOs) occur during larger storms when the system's treatment and storage capacity is exceeded, resulting in discharges of untreated combined wastewater into the Sacramento River. The Sacramento River is the State's major source of water supply, feeding Northern as well as Southern California. Historically, there have been approximately five to six CSO events per year.

In 1990, the California Regional Water Quality Control Board issued a cease and desist order (CDO) because of potential public health threats resulting from system outflows and required the City to develop a plan to improve the combined sewer system. Initially, the City took steps to minimize outflows and CSOs by changing the way it operates the CSS.

When it became evident that operational changes alone would not eliminate outflows and CSOs, the City began a long study of alternative structural solutions.

With many years of hard work and studies of numerous alternatives, the City was able to develop an innovative and cost-effective long-term solution. The solution, developed with the benefit of detailed cost-benefit analyses entails rehabilitating the CSS while increasing the storage capacity. The City will complete the initial phase of this program over approximately a five year period. Rehabilitation of the combined sewers will extend between ten and fifteen years. The total cost of the project is estimated at $132 million in 1992 dollars.

This approach is considered far preferable to the original estimate of $381 million to completely separate the sewer from the stormwater drainage portion of the system. With innovative approaches to resolving the City's outflow and CSO problems, the solution will also provide added flood protection for our citizens. Maximizing the use of available resources, we will be able to spare the City from potentially disastrous rate increases and protect public health and safety, and the environment.

The Regional Water Quality Control Board on March 22, 1996 rescinded its cease and desist order based on the plan the City has committed to implement. The plan focuses on complying with the requirements of the Clean Water Act and the City's adopted goals for storm drainage systems. The City's goals for storm drainage systems are to minimize street flooding during a storm having a ten percent probability of occurring every year (10-year return storm) and to prevent property damage to structures during a storm having a one percent probability of occurring every year (100-year return storm).

The City has committed to spend the maximum amount possible to expeditiously implement the Combined Sewer System Improvement and Rehabilitation Program. The City respectfully requests that the federal government allocate $10 million in the Environmental Protection Agency's FY 1997 State and Tribal Assistance Grants account to assist the City in completing the project.

The City will finance its portion of project improvements by increasing sewer and storm drainage rates 5 percent and 2 percent per year, respectively, through the end of the century. Additionally, higher hookup charges will result in higher building costs within the City.

All told, rates are projected to double between 1991 and 2000. This is especially burdensome for Sacramento's citizens whose stormwater fees in 1993 were already the second highest in the nation. Further increases will heavily impact City residents, especially those will low and fixed incomes, and City businesses.

The economy of the City of Sacramento has been especially hard hit in the last number of years, resulting from the lingering California recession and the closure of the three regional Department of Defense installations in the last ten years. Last year, it was announced that the McClellan Air Force Base would close. One of the region's largest employers, McClellan followed previous closures of the Sacramento Army Depot and Mather Air Force Base. Without these large customers across which to spread costs, the City rate base has been seriously compromised.

The City of Sacramento takes very seriously its responsibility for improving the health and welfare of our citizens and visitors to the State capital. The City is also committed to protecting the beneficial uses of the Sacramento River. As the source of drinking water to over 20 million Californians, the Sacramento is the lifeline of the State. All wastewater dischargers along the River must do their part to protect its integrity.

Federal assistance in helping implement the City's Combined Sewer System Improvement and Rehabilitation Program will greatly assist our efforts to protect public health, improve the environment, safeguard the State's water supply, strengthen the regional economy, and reduce burdens on City residents. Heavily strained City services will be afforded opportunities to address other problems we face. Your help in making this project a reality is greatly appreciated.

Thank you for the opportunity to present testimony on behalf of the City of Sacramento's Combined Sewer System Improvement and Rehabilitation Program. We look forward to working with the Subcommittee this year and in years to come.

## PREPARED STATEMENT OF ROBERT F. SHANKS, DISTRICT ENGINEER, SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

### Sacramento River Toxic Pollutant Control Program

I respectfully request that the following testimony on behalf of the Sacramento Regional County Sanitation District (SRCSD) be entered into the formal record for the subcommittee's FY 1997 appropriations. SRCSD seeks the subcommittee's support for third-year federal funding in FY 1997 for the Sacramento River Toxic Pollutant Control Program within EPA's Environmental Programs and Management Account. SRCSD is requesting $3 million in FY 1997 to support the program, which is a cooperative program conducted by SRCSD and the Central Valley Regional Water Quality Control Board. The program is supervised by EPA's Region IX Office.

This cooperative program, begun in October of 1995, is an excellent example of the type of program recommended by the National Academy of Public Administration in its 1995 report to Congress, *Setting Priorities, Getting Results: A New Direction for EPA*. In its report, NAPA strongly urges fundamental reforms in EPA's relationship with local governments. The report recommends EPA regional office "support for community-level and regional environmental initiatives" to address the institutional fragmentation and scientific uncertainty identified by NAPA as the central dilemmas challenging local implementation of environmental mandates. The Sacramento River Toxic Pollutant Control Program can be viewed as a pilot program that can be used by EPA to guide its reform efforts.

### *Why the Sacramento River Toxic Pollutant Control Program is Needed*

The Sacramento River is the largest and most important river in California. It supplies water for agricultural, municipal and industrial uses as well as providing important recreational benefits. The river is also crucial to the State's environmental health, supplying eighty percent of freshwater flows to the San Francisco Bay-Delta Estuary, one of the most important estuaries on the West Coast.

Unfortunately, this key environmental and economic asset is threatened by pollutant loadings that jeopardize these beneficial uses. The river exceeds State and EPA-recommended water quality criteria developed in the early 1990's for a number of toxic pollutants, particularly metals such as copper, mercury and lead. The primary source of copper and mercury loadings in the river is believed to be abandoned mines located upstream of the City of Sacramento. However, the sources of many of the toxic pollutants found in the river are unknown.

Not only do these pollutants threaten the environmental health of the river, but due to requirements to meet water quality mandates based on EPA criteria, they could jeopardize the region's economy as well. Regardless of the sources of the river's pollutants, public agencies such as SRCSD could be required to treat their wastewater discharges to a level necessary for the river to meet water quality standards. In SRCSD's case, the District could be required to install reverse osmosis treatment to remove small amounts of copper, lead and mercury from its effluent, despite the fact that this costly treatment would reduce total levels of these pollutants in the river by only one percent. Numerous public agencies throughout the Sacramento River watershed could face the same predicament.

### *Program Objectives*

SRCSD became aware of this dilemma several years ago while participating in the development of State water quality standards for toxic pollutants. SRCSD joined with the Sacramento County Water Agency and the City of Sacramento to implement a joint ambient monitoring program to ascertain the extent of the metals problems in the river and their sources. The results of this program helped convince SRCSD that a comprehensive program extending beyond point source pollution control was necessary. As a result, SRCSD developed a proposal designed to bring the Sacramento River into compliance with water quality standards--the Sacramento River Toxic Pollutant Control Program. The program is based on watershed management concepts, recently cited by EPA as the "most logical basis for managing water resources." (*Why Watersheds?*, EPA Office of Water, February 1996). General elements of SRCSD's proposed program include:

- Performing water quality monitoring throughout the basin to determine what standards are violated, where they are violated, and the specific sources of the pollutants causing violations.
- Developing site-specific water quality standards, where appropriate, for the river and its tributaries.
- Identifying and evaluating alternative pollutant control options for significant pollutant sources.
- Developing a technically feasible, cost-effective and implementable program to achieve water quality standards throughout the river and its tributaries.

### *Scientific Data and Stakeholder Participation are Program Building Blocks*

The long-term goals of the program--to achieve water quality standards throughout the Sacramento River watershed--cannot be achieved without adequate data and planning. The essential elements of the initial phase of the program are geared toward providing these. A stakeholder group consisting of representatives of federal, state and local agencies, environmental groups, private industry and agricultural groups, and public interest organizations has been formed One hundred thirty-four participants attended the initial meeting of the stakeholders group on February 21. Subcommittees have been formed to facilitate determination of water quality goals within the watershed as well as development of a long-term watershed plan.

Activities to provide adequate data have also been initiated. The first year of the program, which was initiated in October 1995, focuses on the following key elements:

- Review of existing information on toxic pollutant levels and sources, including the nature, extent and compatibility of current monitoring programs, to determine future research and coordination needs.
- Toxicity monitoring throughout the watershed.
- Development and implementation of a basin-wide water quality/pollutant source monitoring program.

### *Year Two: How Will Goals be Achieved?*

The second year of the program, to be funded with FY 1996 appropriations, will begin examination of the best methods to achieve identified goals, focusing on the following activities:

- Stakeholder identification of programs to achieve identified water quality goals.
- Implementation and testing of basin-wide water quality/pollutant source monitoring program. Results will be used to identify impaired waterbodies and sources of impairment where possible. Program will focus on highest priority pollutants, primarily metals, due to funding limitations.
- Investigation of site-specific water quality objectives (standards) to identify areas where statewide water quality objectives must be scientifically verified and areas where site-specific objectives are applicable.

### *Year Three: Detailed Planning Elements*

In year three, program participants will begin to develop plans to achieve the program's long-term goals. Monitoring will be expanded to provide sufficient data to determine site-specific needs:

- Stakeholder Group Meetings--focus will shift from program development to identifying alternative pollutant control approaches.
- Monitoring Program--Monitoring will be conducted for full array of pollutants identified in program design. List of impaired waterbodies and pollutant sources will be updated.
- Site-Specific Objectives--Development of site-specific objectives for targeted river segments and tributaries will begin. Laboratory and field studies to confirm need for site-specific objectives will be conducted. Future work plans and cost estimates will be developed for areas where site-specific objectives are justified.
- Toxic Pollutant Control Options--Options for controlling toxic discharges will be identified. A work plan to develop and evaluate alternative control options will be prepared.

### *Year Four: Planning for the Future*

The fourth year of the program will focus on developing a comprehensive plan based on the information and experience gained in the first three years. The scientific data required to develop a meaningful plan will necessitate costly monitoring. Federal funding will help obtain the key technical information needed to develop an effective program. While much of this information will be site-specific, federal assistance will facilitate development of general technical knowledge required for watershed management planning, such as ecosystem risk assessment and methods to develop site-specific water quality standards.

The Sacramento River Toxic Pollutant Control Program will also demonstrate the cooperative process identified in the NAPA report to Congress mentioned above, in which the researchers state that "The key to success is bringing diverse resources and perspectives together, and holding them together through a period of experimentation and learning." Consistent with this philosophy, the program as envisioned will yield a comprehensive plan that will be supported and implemented entirely at the State and local level. SRCSD originally anticipated that developing a comprehensive plan to achieve the program's water quality goals would require a five-year commitment. However, this process is in the developmental stage, making it difficult to predict with certainty how long it will take to devise an implementable plan.

Lastly, federal assistance will leverage federal, state and local dollars in the Sacramento River watershed and in future programs. One of the primary goals of watershed management is to increase efficiency by coordinating existing programs and efforts to focus public resources on high risk environmental threats. In keeping with this goal, SRCSD's proposed program will be integrated into a larger State effort to incorporate watershed planning into all state water quality management programs. Through its Watershed Management Initiative, the State hopes to maximize its resources by integrating all aspects of the State program, which utilize federal, State and local resources.

Thank you for the opportunity to present this statement on the Sacramento River Toxic Pollutant Control Program to the subcommittee. I strongly urge the subcommittee to continue federal involvement in the program, which can provide EPA with experience in developing State and local capabilities that the NAPA report found so essential SRCSD looks forward to working with you in the coming months.

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## PREPARED STATEMENT OF PASKO RAKIC, M.D., D.SC., CHAIRMAN OF THE DEPARTMENT OF NEUROBIOLOGY, YALE UNIVERSITY SCHOOL OF MEDICINE

I am Dr. Pasko Rakic, Chairman of the Department of Neurobiology at the Yale University School of Medicine. In addition, I am currently the President of the Society for Neuroscience, whose membership consists of basic and clinical brain scientists affiliated with universities, hospitals and scientific institutions throughout North America and abroad. I am testifying on behalf of the 25,000 members of the Society and the 50 million Americans with brain disorders.

I am here to testify for increased research funding for the National Science Foundation (NSF) and the Department of Veterans Affairs (VA). The Society for Neuroscience is well aware of the tight fiscal constraints facing this nation, but we also recognize the importance of year-long continued funding for scientists and researchers. With no real budget resolution for FY 1996, the NSF and VA have faced particularly tough limitations on their research programs.

### National Science Foundation

The Society for Neuroscience supports the Administration's budget request of $3.3 billion for the NSF, 4.6% above the FY 1996 estimate. The Administration requested $2.47 billion for Research and Related Activities, including $326 million for Biological Sciences and $124 million for Social, Behavioral and Economic Sciences.

We believe that NSF-sponsored research is a major source of knowledge for today's researchers and provides a setting in which tomorrow's researchers are trained. Basic research is the key to understanding neurological and mental disorders, and medical breakthroughs cannot be achieved without a significant investment in basic research. The NSF funds hundreds of studies on the fundamental properties of the central nervous system, and much of what we know about complex higher nervous and cortical function has been the result of basic brain research. NSF also supports basic research in molecular genetics, which is highly important to understanding the brain, considering that 35 - 40% of all the genes in the human genome are related to brain structure and function. Much of basic neuroscience research is at the cellular and molecular level, and it is a realistic goal that we will have a comprehensive understanding of brain function at the molecular and cellular level by the year 2000.

Some of the most exciting and challenging scientific research opportunities address the mapping of function onto the structure of the brain. The NSF plays the pivotal role in the development and support of this multidisciplinary research area through activities that provide unique opportunities for neuroscientists to collaborate with investigators in mathematical, computer and information sciences, and engineering. Teaming modern brain scientists employing molecular biology, neurogenetic, neurophysiological, psychological, and computational techniques with investigators in these other scientific disciplines provides a broad essential scientific infrastructure which will ultimately lead to the development of novel solutions to problems in neuroscience research.

- The NSF supports a great deal of this country's research in developmental neurobiology, a field dedicated to how the brain evolves, develops and changes.

- NSF research programs have pioneered the development of cognitive neuroscience, which combines the study of behavior and cognition and artificial intelligence systems with basic neurobiological studies.

- No other government agency has invested as much as NSF in this new area of brain research.

The Society for Neuroscience is deeply and firmly committed to the basic science approach and strategy represented by the NSF. It is at the NSF where basic and fundamental questions about brain structure and function are supported. Research conducted at the NSF serves as the very foundation that scientists build upon. A wide spectrum of studies, ranging from single cell organisms to the human brain, are included in the research portfolio of the NSF.

The National Science Foundation deserves the level of support we are requesting. The Congress can feel comfortable in knowing that it is money well spent, and that ultimately this research will bring benefits to millions of citizens in this country.

## Department of Veterans Affairs

For FY 1997, the Administration has requested $257 million for the VA Medical and Prosthetic Research Program, the same level that the VA is being funded at under the current continuing resolution for FY 1996. Again, we recognize the tight fiscal constraints faced by this Subcommittee, but we urge you to increase funding for FY 1997. There is very strong documented evidence that the VA research account is every bit as vital to the provision of quality health care for veterans as any patient care program funded by the Medical Care account. More than half of the nation's physicians receive some part of their medical training through the VA. The VA medical system also provides an excellent opportunity to conduct large clinical trials, and veterans receive highly skilled medical care through various affiliation arrangements. Neuroscience research funded by the VA is a vital component in the VA's medical and patient care programs. The availability of research funding provides an irreplaceable incentive that allows the VA to recruit and retain top caliber clinicians and researchers.

Because of the continuing shortfall of research funding within the VA, the status and the very integrity of the entire VA research program is in serious jeopardy. This would be tragic for the nation's millions of veterans.

- Currently, VA-sponsored research in neuroscience has begun to develop extraordinarily promising discoveries in brain and spinal cord trauma, epilepsy, Parkinson's disease, amyotrophic lateral sclerosis, schizophrenia, multiple sclerosis, Alzheimer's disease, and depression.

- VA-sponsored research is vital for the ongoing conduct of basic and clinical studies in the cause and the effective treatment of these crippling and disabling mental disorders.

- Currently, somewhere between 45% and 50% of all patients in the VA health care system have diseases in the neuropsychiatric category.

A static level of funding in VA research, as proposed by the Administration for FY 1997, would seriously compromise and lead to the ultimate demise of the important VA Research Center's Program in Schizophrenia, Alcoholism and Alcohol Abuse, and Post-Traumatic Stress Disorder. Every day, these programs are developing new methods to understand, diagnose and treat these devastating disorders. The static state of research funding will in a very direct sense compromise the health of tens of millions of our veterans.

In conclusion, the Society for Neuroscience recognizes the tremendous constraints that the drive for deficit reduction has placed on all discretionary programs for FY 1997. We are also fully aware of the many critical programs this Subcommittee must fund; however, we strongly believe that the research programs we are advocating are investments for the future, and we urge you to place NSF and VA research among the Subcommittee's highest priorities.

Thank you for your consideration of our requests. I would be pleased to answer any questions the Subcommittee may have.

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## PREPARED STATEMENT OF THE SOCIETY OF TOXICOLOGY

The Society of Toxicology is pleased to submit written testimony to the Senate Appropriations Subcommittee on Veterans Affairs, Housing and Urban Development, and Independent Agencies in support of the Superfund Hazardous Substances Basic Research Program.

### Background

The Society of Toxicology (SOT) is a professional membership organization bringing together academia, industry, and government. Established in 1961, SOT is a society of professionals dedicated to developing knowledge for the improvement of the health and safety of living beings and the protection of their environment.

Under the National Institutes of Health (NIH), the National Institute of Environmental Health Sciences (NIEHS) administers the Superfund Hazardous Substances Basic Research Program which supports university and medical school efforts to seek the knowledge necessary for effective public responses to local hazardous waste deposits. Funding for the Program is passed through the U.S. Environmental Protection Agency (EPA) to NIEHS as established in Section 311 of the Superfund Amendments and Reauthorization Act (SARA) of 1986.

The unique requirements of the legislation - that biomedical researchers must team with civil engineers to understand both the nature and probable risk of human exposure or with chemical engineers to devise means to destroy or remove chemicals of clear public health concern - has created integrated research and development groups. Recognizing that America's diverse geography creates special challenges, these research teams are currently supported by NIEHS at 17 universities. Research projects include basic research on cancers, such as breast and prostate, and birth defects and other environmental health-related diseases. The interaction, common goals, and know-how exchange are among the most highly developed in the United States environmental science and engineering.

Communities near hazardous waste sites want to know if these hazardous chemicals are reaching their water or air supplies. They want to know if low levels of these contaminants effect their health and their children's health. They want it cleaned up. Our universities are responding with technology driven research efforts which are results oriented.

## Objectives of the Superfund Hazardous Substances Basic Research Program

Mere assessment of each site represents an expensive proposition. It is often very difficult and expensive to translate a known low level of exposure into the probable human health effects. Existing methods for cleaning up waste sites are both expensive and, in many cases, ineffective. Thus, the primary objectives of the NIEHS Program are to: (a) develop more rapid, effective, and cost-effective strategies for measuring the existence and movement of chemicals in communities; (b) place major emphasis on technology to detect these chemicals in humans and to analyze the effects, if any, in a way which allows unambiguous attribution of causality; (c) have engineers and physical chemists collaborate to better understand how chemicals are physically trapped in soils so that improved clean-up strategies may be devised; and (d) develop basic biological, chemical, and physical methods to reduce the amount and toxicity of hazardous substances.

One example of the cost-effectiveness of the program is a comparison of the cost per full-time equivalent (FTE) among the various types of laboratories. One of our centers participating in the Superfund Hazardous Substances Basic Research Program reported that FTE costs are $56,000 compared to $200,000 in industry laboratories and $300,000 in national laboratories, making the program 4-6 times more cost effective than federal or industrial research labs.[1]

The program has also had a tremendous impact on industry. It has stimulated the development of biotech companies which created environmental sampling and testing products used by industry to comply with pollution standards and protect human health. In addition, the program has resulted in improved diagnostic technologies which have been translated for use in the private sector and has improved industry's capacity to self monitor.

Finally, the Superfund Hazardous Substances Basic Research Program has played a crucial role in technology development and diffusion. For example, program scientists have been involved in retraining DoD engineers to increase diffusion of technologies into the civilian workforce and to prevent worker displacement. The research conducted has enabled the DoD to begin converting its un-used land and facilities to industrial or civilian uses.

## Recent Highlights

As a result of the past investment in this program, research progress has occurred in the following areas:

- Health Effects
  Hazardous materials present in the environment can affect the health of humans in numerous ways. Research on the health effects of toxic exposures includes identification of the causative agent(s); determination of the minimum concentration where these effects become manifest; development of diagnostic tools for the detection of these materials in

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[1] Data provided by James A. Swenberg, DVM, Ph.D., Department of Environmental Sciences and Engineering, University of North Carolina.

tissue as well as within the environment; and the mechanisms by which these substances exhibit toxicity. This knowledge can then be incorporated into strategies for the remediation of hazardous waste sites.

- Risk Exposure Assessment
  Evaluation of existing and new technologies/methodologies for the improvement and validation of risk assessment models are key to Risk/Exposure Assessment research. Improvement of the scientific data obtained and the methods used to make remediation and policy decisions, especially in biological based risk assessment, is needed. A thorough understanding of the patterns of exposure within the study population is of prime importance. Studies investigating exposure to hazardous substances in sensitive populations (e.g., children) are included. The goal is to establish methods that provide realistic and practical assessments to aid policy makers in finding remediation methods that meet the public health needs of the affected population in a cost-effective manner.

- Ecology
  Research into the ecological effects of hazardous substances has implications for human well-being as well as for the environment. These effects can be utilized as early warning systems by monitoring physiological and behavioral patterns of "sentinel" species. In this way, ecological research can contribute significantly to measuring the risk posed to humans or to the ecosystem by the presence of toxic materials in the environment.

- Fate and Transport
  Fate and transport research contributes to the understanding of how physical and toxicological properties of hazardous substances are affected by their presence in geological and biological systems. This understanding is critical in determining the bioavailability of these materials and in developing effective remediation or containment strategies. Advanced computer modeling of material transport processes is an integral part of many such studies. The information gained from fate and transport studies and enhanced models can be applied to human risk and remediation assessments.

- Bioremediation
  Bioremediation research plays an important role in the overall effort to develop new remediation technologies that will be applied to Superfund site clean up. Bioremediation involves the use of organisms to convert bioavailable hazardous substances to less toxic or more easily degraded byproducts. Bioremediation can provide a cost effective alternative to more traditional physical remediation methods in many circumstances.

- Remediation
  Remediation research covers the spectrum of technologies being developed for the clean up of air, water, and soil contaminated by hazardous substances. These methods include chemical treatment, physical washing, extraction, stripping, stabilization, and incineration. The remediation technology described in the attached examples offers the potential for developing timely and cost-effective hazardous waste treatment regimens applicable to many different toxic substances.

## Funding Request and Justification

In past years, the Senate and House Appropriations Committees have given strong bipartisan support to this targeted research program. The fiscal year 1996 VA, HUD, and Independent Agencies conference agreement appropriates $32 million for this program. The FY 1995 appropriation of $35.7 million was a small portion of our total national research expenditure and less than 2% of the Superfund budget.

Now, as the Superfund Program, and with it the Superfund Hazardous Substances Basic Research Program, is due for reauthorization, we ask your support for an appropriation of at least $40 million in FY 1997. The merit of this program is well recognized. During last year's reauthorization debate, a bipartisan proposal supported a reauthorization of $40 million in FY

The FY 1997 request will enable the Tribe to continue utilizing funding from the Indian Environmental General Assistance Program to provide for ongoing program planning and management. Regulatory development initiatives started in the past two years require administrative process execution which will involve public input as well as the development of implementation guidance and criteria.

The Tribe will continue Agency-wide and Regional planning through participation on the USEPA Tribal Operations Committee and Regional Operations Committee. The Sokaogon Chippewa Community has taken a lead role in restructuring the Agency, lowering costs of regulatory measures and enhancing the Tribal role in environmental protection. Planning and management of Tribal environmental programs requires coordination with multiple federal and state agencies. These activities are time consuming and costly, yet reduce the overall cost of environmental management through effective planning and communication.

Our second request of $402,624 is to continue the effective implementation of the Sokaogon Chippewa Community Water Quality Standards through program management, Agency/Tribal cooperative studies, monitoring, testing and wetland assessments.

The Sokaogon Chippewa Community's water quality management program has had great success in removing government oversight and returning environmental management to the community through the delegation of federal program management to the Tribe. Many Clean Water Act programs are now being implemented at the tribal level where environmental protection can be developed in accordance with local economic development plans for community growth. Tribal Water Quality Standards were approved by the Agency in January, 1996. This full delegation of the program reduces federal government oversight and enhances Tribal water quality management. This approach reduces government, addresses federal trust responsibility and supports the water quality goals of the Tribe.

Tribal responsibilities and management activities associated with Clean Water Act Sections 303, 401, 106, 314 and 319 are core components of the Tribal water quality program. Program delegation for Sections 303, 401, 106 and 314 of the Act has been secured. Program delegation for section 319 will be completed in FY 1996. Tribal water program implementation will be achieved through the current (EPA approved) annual surface water monitoring program, ecological assessments, non-point source monitoring, wetland verification and on-going wild rice (aquatic marcophyte/cultural resource) research. This allows for the collection, field and laboratory analysis and interpretation of biological, chemical and physical data. Sediment analysis, habitat structure surveys, wetland delineation and biological monitoring are currently being developed, and primary aspects of this research have already been implemented.

Surface and groundwater monitoring and assessments must be performed to analyze the functions of the regional hydrologic system. Proposed mine activities adjacent to the Mole Lake Indian Reservation threaten the physical, chemical and biological integrity of Tribal Federal Trust Resources. The Tribe will develop evaluation techniques to analyze the character and function of surficial and glacial aquifers. We will implement field data collection and assessment in coordination with the Agency. The Tribe will also identify well head protection areas as well as regions for future potable water source supplies.

I have attached budget specifications for these requests and urge your ongoing support for full funding for these programs.

1996, increasing to $55 million. SOT is advocating an authorization level of at least $40 million in both the House and Senate reauthorization proposals which will give appropriators the flexibility to measure the program's worth in the context of each year's budgetary pressures. Similarly, an appropriation of at least $40 million in FY 1997 will send a message to authorizers that this cooperative program is necessary for making accurate assessments of human health risks and developing cost-effective clean up technologies.

In conclusion, an appropriation of at least $40 million for the Superfund Hazardous Substances Basic Research Program will provide the science base needed to make accurate assessments of the human health risks, determine prioritization of contaminated sites, and make cost-effective clean up decisions. Moreover, our national capacity to understand health effects of waste sites, conduct basic toxicity evaluation and risk assessment, prevent future pollution and potential adverse health effects, and stimulate industrial development depends on strong Congressional support.

The 104th Congress has made it clear that federal policy should be based on sound science. The only scientific basis for the clean up of hazardous sites *is* the Superfund Hazardous Substances Basic Research Program.

Thank you for this opportunity to submit these comments. Please do not hesitate to use the Society of Toxicology as a resource and contact us with any questions that may arise in Committee deliberations.

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## PREPARED STATEMENT OF ARLYN ACKLEY, CHAIRMAN, SOKAOGON CHIPPEWA COMMUNITY IN CRANDON, WI

I am Arlyn Ackley, Chairman of the Sokaogon Chippewa Community in Crandon, Wisconsin. On behalf of our Tribe, I want to thank you for affording me this opportunity to present written testimony for the record in strong support for full funding for two programs in the Environmental Protection Agency for FY 1997.

The first request is in the amount of $704,380 from the Indian Environmental General Assistance Program. This is for the continued planning, implementation and management of the Sokaogon Chippewa Environmental Protection Programs. Your support in FY 1995 and FY 1996 has enabled the Tribe to make significant progress in environmental program planning, development and implementation.

Current fiscal year activities include the Federal approval of Tribal water quality standards, implementation of baseline water quality testing, air program regulatory development, professional staff training, and physical infrastructure development. The Tribe is now finalizing details of a 5-year Environmental Protection Planning Agreement with USEPA Region-5. This agreement will assist in the coordination of these and future activities of the Tribe's comprehensive approach to environmental management.

Enhanced capabilities of Tribal staff resulted in the development and approval of quality assurance plans for surface water and groundwater sampling. Staff also provided review, assessment and comment on mine related proposals and permits. Currently, we are working with the EPA, DOI and the Corps of Engineers as the Corps continues the development of a Federal Environmental Impact Statement regarding the decision whether to issue the sole Federal permit for the Crandon Mine project, adjacent to the Mole Lake Indian Reservation.

The Tribe's role in the development of the federal EIS for the Crandon Mine project will require the maintenance and continuity of a professional Tribal environmental staff to articulate tribal cultural concerns in a sound scientific manner. This capability is required to meet Constitutional duties to protect and maintain the health, safety and welfare of the Tribe.

## FY 1997 USEPA Appropriations Summary

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### A. INDIAN ENVIRONMENTAL GENERAL ASSISTANCE PROGRAM

**Appropriations Component:** Continue Planning, Implementation and Management of the Sokaogon Chippewa Environmental Protection Programs.

**Cost:** $704,380

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### B. WATER QUALITY STANDARDS IMPLEMENTATION PROGRAM

**Appropriations Component:** Continue Implementation of the Sokaogon Chippewa Community Water Quality Standards through program management, Agency/Tribal cooperative studies, monitoring, testing and wetland assessments.

**Cost:** $402,624

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### A. INDIAN ENVIRONMENTAL GENERAL ASSISTANCE PROGRAM

**Budget:**

**Personnel:**

| | |
|---|---|
| Program Director, Planning and Program Development Specialist, (2) Project Managers, (2)Administrative Assistants, Water Quality Manager, Environmental Policy Specialist, Solid Waste Manager, Compliance Specialist, (2)Field Technicians. | $349,000.00 |
| **Fringe:** | $55,840.00 |
| **Travel/Training:** | $55,625.00 |
| **Supplies:** | $16,250.00 |
| **Equipment:** | $32,300.00 |
| **Contractual:** | $23,000.00 |
| **Facilities:** | $56,200.00 |
| **Indirect Costs (21.8%):** | $116,170.00 |
| **Total Program Cost:** | **$704,385.00** |

### B. WATER QUALITY STANDARDS IMPLEMENTATION PROGRAM

**Budget:**

| | |
|---|---|
| **Monitoring, Testing and Assessment:** | |
| Laboratory analysis, field monitoring and data interpretation | $72,300.00 |
| **Implementation and Management:** | |
| Program management, impact assessment and land-use planning | $149,100 |
| **Codification and Regulatory Development:** | |
| Tribal court training, ordinance development and permit compliance | $35,250.00 |
| **Surface and Groundwater Evaluation and Characterization:** | |
| Cooperative studies with EPA Region-5, Crandon Mine Task Force | $93,600.00 |
| **Project Indirect Costs (21.8%):** | $52,374.00 |
| **Total Water Program Cost:** | $402,624.00 |

## PREPARED STATEMENT OF SPELMAN COLLEGE, ATLANTA, GA

Mr. Chairman and other Members of the Committee, thank you for giving Spelman College the opportunity to present written testimony to your subcommittee as you consider the FY97 Appropriations bill for the Departments of Veterans Affairs, Housing and Urban Development, and the Independent Agencies. It is truly an honor to share with you our recommendations as you set the funding levels for a number of agencies that continue to play a key role in helping the College to maintain and enhance its position as a national leader in the area of science education. These agencies include the National Science Foundation (NSF), The National Aeronautics and Space Administration (NASA), the Environmental Protection Agency (EPA) and The Department of Housing and Urban Development (HUD). In light of emerging trends associated with our nation's productivity and the participation of underrepresented populations in the nation's science and technological workforce, funding from these agencies is needed more than ever.

Some on the subcommittee may not be aware of this, but the school that is now Spelman College was founded to educate and train women who had been slaves. At the time of its founding, the school, located in the basement of a Baptist Church, had 11 students and $100. Today, the College enrolls 1,961 students and employs 134 full-time faculty. Spelman ranks second in the nation for the number of African American baccalaureate degrees awarded in mathematics, fifth among all U.S. institutions in the number of African Americans admitted to medical school, and is one of only two Historically Black Colleges and Universities (HBCUS) ranked by the Carnegie Foundation as a Baccalaureate I institution. Because of Spelman's past accomplishments and capacity for future distinction, the College recently was named by the National Science Foundation and NASA as a Model Institution for Excellence. Fully one-third of Spelman women major in science, engineering and mathematics (SEM), and more than 30 percent of the College's graduates receive degrees in these fields.

Despite Spelman's success, the College still recognizes that much work remains. Spelman has limited resources. The College's science facilities are cramped and outdated. Many of the students, while academically astute, come from economically disadvantaged backgrounds. The College's faculty spend the majority of their time teaching and need enhanced research opportunities. In one aspect, the challenges Spelman faces are unique to the College's position as an undergraduate, liberal arts, women's college that has moved to the national forefront in preparing minority women for careers in the SEM fields. On the other hand, the challenges Spelman must face are very similar to the challenges confronting the many small colleges and universities that are doing the lion's share of training American students in these fields, particularly those that enroll large numbers of students from underrepresented backgrounds. In this vein, the assistance of all of these agencies is critical to the fulfillment of our mission.

Generally speaking, it is well-recognized that a declining number and percentage of American citizens are obtaining Ph.Ds in science, engineering and mathematics; while an increasing number and percentage of persons who are not U.S. citizens are obtaining degrees from U.S. institutions of higher education in these fields. The 1994 NSF report: "Science and Engineering (S&E) Doctorates Awarded by Citizenship Status, Major Field of Recipients -- 1983-1993," notes that:

- In 1993, American citizens received 496 Ph.Ds in mathematics. Of this number, African Americans received 5; Hispanics 9; American Indians 1; and Asians 28. Non-U.S. citizens received 611 Ph.Ds in Mathematics.

- In Engineering, 2,225 Ph.Ds were awarded to American Citizens; of this number, African Americans received 41, Hispanics 56; American Indians 2; and Asians 218. Non-U.S. citizens received 3,249 doctorate degrees in engineering.

Even more disturbing than these general trends are the trends related to women of color studying mathematics, science and engineering. Today, a young African American girl has one chance in 21,000 of ever receiving a Ph.D in these areas. Conversely, she has two chances in five of dropping out of high school before graduation. More importantly, for African American women seeking Ph.Ds, the situation today appears to be worse than it was a decade ago. An article, "Minority Women in Science and Engineering: A Review of the Progress," published by Margaret E.M. Tolbert, in the Journal of ETA, notes that "data on minority women show an overall increase in the percent of doctoral degrees earned by minority women in 1990 compared to 1980." Regrettably, she adds, "the percentage did not increase for African American women . . ." In fact, she explains, there has been a decline in the number of African American women earning Doctorates in science and engineering. In 1980, 3.9 percent of these degrees were awarded to members of this group. Compare that to 1990 data showing only 2.7 percent of these degrees awarded to African American women.

With this as background, Spelman College requests that the committee continue to provide increased funding for the following programs:

## NATIONAL SCIENCE FOUNDATION

The President has requested $3.3 billion for FY97, this is a 4.6 percent increase over the level provided last year. Recognizing the contributions NSF has made in helping to build the capacity of small institutions like Spelman, we applaud this increase; however, we also ask that comparable increases be provided for: (1) the Education and Human Resources Division (EHR), which is targeted to get only a 3.3 percent increase, bringing its funding to $619 million; and the (2) Academic Research Infrastructure (ARI) Division which is eliminated in the President's budget. Last year, the ARI program received $100 million.

In FY96, funding provided by the Education and Human Resources Division and ARI represented 84 percent of all NSF dollars awarded to Historically Black Colleges and Universities. Total spending for HBCUs in FY96 is approximately $34.3 million; this is about one percent of the total NSF budget. While small, it is clear that the EHR and ARI accounts play a critical role in helping HBCUs to develop the programs needed to effectively meet the scientific and technological challenges confronting the nation.

Last year, Spelman received $1.6 million under the ARI account. These dollars will allow the College to modernize laboratory research space in a science facility constructed at the turn of the century. Additionally, the College has received funding under the Research Careers for Minority Scholars program, the Undergraduate Education/Instrumentation and Laboratory Improvement program, the Division of Mathematical Science, and the Model Institution for Excellence program designed by NSF and funded in part by the National Aeronautics and Space Administration. At a minimum, we request that these programs receive a 4.6 percent increase in funding as is proposed for the overall NSF budget.

## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The President's request for NASA is $13.8 billion for FY97. This represents a $16.5 million reduction below the level anticipated for FY96. Of the total proposed for FY97, the Minority University Research and Education Program would receive $45.9 million. This is a reduction of about $2.5 million from the levels provided in FY96. Spelman recognizes that this reduction is the result of program consolidation.

In terms of devising strategies related to promoting and enhancing the participation of underrepresented groups in our nation's science-related enterprises, there are few that provide the resources that are available through NASA's Minority University Research and Education Program. Last year, under this account, Spelman was awarded a five-year, $9.1 million award as a Model Institution for Excellence. NASA made another award to Bowie State. The MIE program is exactly the type of program that needs to be supported and replicated at the Federal level. The primary objective of the MIE program is to give enhanced support to a select number of institutions that have demonstrated excellence in producing baccalaureate degrees in the SEM fields for minority students. It is very difficult, if not impossible for undergraduate minority institutions to compete for the same funds and under the same programs as the larger, research institutions. There is a need to create incentives and opportunities for the smaller schools to do what they do best: to educate and train the majority of students needed for tomorrow's workforce.

Spelman also receives significant support from NASA's Undergraduate Student Research Program and the Women in Science and Engineering (WISE) Scholars program. Regarding the WISE program, more than 90 percent of the young women who participate in the program go on for graduate study. About 60 women on the Spelman campus participate in this program annually.

Spelman asks the Committee to recognize the indelible and profound role that NASA's Minority University Research and Education Program is playing in helping to educate and train tomorrow's workforce. More specifically, we ask that you provide the funding needed to support these efforts and that you work to ensure that these programs are protected during the agency's reorganization. As you know, five strategic areas have been identified in NASA's 1994 Strategic Plan. They include: (1) Mission to Planet Earth; (2) Aeronautics; (3) Human Exploration and Development of Space; (4) Space Science; and (5) Space Technology. It is important that the minority education programs not lose their identity and resource base during the Agency's restructuring.

## THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

In FY97, HUD is requesting $21.9 billion in funding. This is an increase of about $4 billion over the levels provided in FY96. A significant portion of this increase would go to the community planning and development programs. In fact, an increase of $300 million is proposed in order to support another round of Empowerment Zones and "performance bonus funding" for existing Empowerment Zone communities. Located in one of the most blighted sections of Atlanta's inner city, Spelman College recognizes the value of the CDBG program and the Empowerment Zone initiative. We also recognize the contribution that HBCUs can make in revitalizing these areas. Consequently, those of us who have participated in the HUD/HBCU program are somewhat concerned about the Agency's failure to include any reference of this program in its budget justification for FY97. The College asks that the Committee include funding for this program in FY97 and also include direction in the bill that will encourage and support the participation of HBCUs within designated Empowerment Zones.

ENVIRONMENTAL PROTECTION AGENCY

The FY97 budget proposes a nine percent increase over 1996, to $3.4 billion for EPA's operating program. Of course, other funding is requested for Clean Water, Drinking Water and Superfund activities managed by the EPA. Environmental protection and clean-up present complex challenges for our nation. Spelman College is actively partnering with the EPA in a couple of areas. The College has received funding to establish a Fellowship program for science majors, and Spelman students and faculty have received funding to conduct research on the bioremediation of heavy metals. Very few undergraduate institutions are fully engaged in these types of activities. Consequently, extra steps need to be taken to ensure that funding is provided in order to increase the participation of schools like Spelman and to guarantee that our nation has the pool of workers needed to make our environment safe and clean.

CONCLUSION

Mr. Chairman, this concludes our testimony. Again, thank you for allowing Spelman College to share its written testimony with your subcommittee.

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## LETTER FROM KERRY L. SUBLETTE, SARKEYS PROFESSOR OF ENVIRONMENTAL ENGINEERING, THE UNIVERSITY OF TULSA

March 25, 1996

Senator Kit Bond
Chairman
Senate VA-HUD Subcommittee
131 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Senator:

The downturn in the domestic petroleum industry in the last decade has had a serious effect on the economies of oil-producing states and on U.S. energy self sufficiency. In Oklahoma and other oil-producing states, independent producers are going out of business, major oil companies are moving their exploration and production overseas and shutting down refineries, and many highly-skilled and high-paying jobs have been lost.

A major factor in the increasing costs of business in the domestic petroleum industry is the cost of compliance with U.S. environmental regulations. In response to the needs of the oil-producing states and the nation, the three major universities in Oklahoma, The University of Oklahoma, Oklahoma State University, and The University of Tulsa, together with the University of Arkansas, have formed the Integrated Petroleum Environmental Consortium (IPEC). The mission of IPEC is to increase the competitiveness of the domestic petroleum industry through a reduction in the costs of compliance with U.S. environmental regulations. Objectives specific to this mission include 1) the development of new cost-effective technologies to lower the costs of complying with the pollution control and waste disposal regulations, 2) reducing the financial risk to the independent producer in complying with these regulations through improved business practices, and 3) enhancing environmental training at participating institutions to ensure that new graduates, whether they be legal, technical or business professionals, are aware of the environmental implications of their activities on the job.

IPEC is requesting federal support as part of the FY 1997 appropriation for the Environmental Protection Agency through the Science and Technology account or other source the Subcommittee may determine to be appropriate. The attached written testimony is submitted in support of that request. We appreciate your assistance

Sincerely,

Kerry L. Sublette
Sarkeys Professor of Environmental Engineering

## The Integrated Petroleum Environmental Consortium

***It is proposed that the U.S. Environmental Protection Agency establish and support a focused, university-based program, the Integrated Petroleum Environmental Consortium (IPEC), with the goal of increasing the competitiveness of the domestic petroleum industry through a reduction in the cost of compliance with U.S. environmental regulations. Federal support is specifically requested as part of the FY 1997 appropriation for the Environmental Protection Agency through the Science and Technology account or other source the Subcommittee may determine to be appropriate.***

## The Crisis in the U.S. Domestic Petroleum Industry

The availability of energy will be the single most important factor in determining quality of life in the United States over the next century. Jobs, manufacturing output, transportation, and personal comfort are all tied to a plentiful, affordable energy supply. The petroleum industry has played a major role in meeting energy needs in this century. Petroleum will continue to be a major factor in the energy needs of the world well into the next century. However, the declining price of crude oil and the increasing cost of compliance with environmental regulations have combined to produce a decrease in domestic oil production in the U.S. The major oil companies have scaled down their domestic operations and refocused their exploration and production activities on foreign resources. The 8000 independent producers are faced with two options - producing from the domestic resource base or going out of business. At the same time, the independents are increasingly the inheritors of mature fields and reservoirs left behind by the majors. Yet compared to the major producer the independent is the most vulnerable to the declining price of oil and gas, the costs of environmental compliance and unfavorable tax policies. The independent producer has only one source of revenue--the sale of oil and gas. There is no vertical depth to his business. These factors have combined to not only greatly reduce the number of new wells drilled but also to accelerate the plugging of marginal or stripper wells. In the U.S. a stripper well is plugged every 30 minutes. At the same time new well completions are at a 45-year low.

Clearly this trend is not in the best interest of the U.S. in terms of energy self-sufficiency or national security. We are turning over control of our cost of production in terms of energy costs to foreign interests. If domestic exploration and production and refining are to continue to play a strategic role in meeting US energy needs, the domestic petroleum producer will require access to low cost technology for waste minimization and environmental remediation in exploration and production (E&P), refining, transportation and end use of petroleum.

In many cases this technology does not now exist in a cost-effective form. Conventional waste treatment and pollution control technologies always add to E&P, refining and transportation costs. These costs are increasingly out of proportion with the economic output of the petroleum industry. In 1991, four industry sectors (chemicals, petroleum, pulp and paper, and primary metals) incurred three-fourths of the $21 billion spent by U.S. manufacturers to comply with pollution control regulations. However, these sectors accounted for about one-fifth of U.S.

manufacturers' value added (Office of Technology Assessment). In 1992, the domestic petroleum industry spent $10.5 billion on the environment. This is more than the top 300 oil and gas companies earned in profits that year and more than the industry spent searching for oil and gas in the U.S. in 1992. With oil at $16 per barrel at the wellhead, the industry spent $4 on environ-mental protection for every domestically produced barrel of oil - $41 for every man, woman and child in America (*Oil and Gas Journal* and the American Petroleum Institute).

All U.S. industry is caught in the conflict between national economic and environmental goals. Pollution control in the petroleum industry presents regulatory hurdles for U.S. domestic production and refining that producers and refiners in many other countries do not face. This places U.S. producers and refiners at a global competitive disadvantage. The U.S. petroleum industry needs cleaner, more cost-effective technologies and new approaches to lower the costs of complying with pollution and waste disposal regulations that U.S. society demands. A reduction in environmental compliance costs will have the greatest impact on the national economy when applied at this level - the level of the extraction industries. Lower energy costs make all industry more competitive. The petroleum industry and the nation would benefit not only from lower compliance costs, but also from the jobs and commerce preserved in the domestic petroleum industry and the related trade in capital equipment and professional services in industries that service the petroleum industry. New technologies for pollution control and remediation will also be an exportable product.

## The Integrated Petroleum Environmental Consortium (IPEC)

For strategic and economic reasons the U.S. domestic petroleum industry must be able to compete with foreign producers and refiners. A major sector of our economy and our national interests are clearly at stake. Compliance with environmental regulations is a major factor in that competitiveness. The strategic and economic importance of this industry requires that industry, government and academia combine their resources and coordinate their efforts toward finding solutions for the environmental problems that represent the greatest challenge to the competitiveness of the domestic petroleum industry. The success of this effort will not only stimulate jobs in this industry sector, but also contribute in a large way to the environmental health of the nation. In response to this need, the four major research universities in the oil-producing states of Oklahoma and Arkansas have joined together to form the Integrated Petroleum Environmental Consortium (IPEC). The mission of IPEC is to increase the competitiveness of the domestic petroleum industry through a reduction in the costs of compliance to U.S. environmental regulations. Objectives specific to meeting the goals of the consortium include the following:

### *1. Development of cost-effective technologies and business practices to meet the challenges of environmental regulations to the competitiveness of the domestic petroleum industry.*

As already noted, new technologies are needed in the petroleum industry now to provide cost-effective solutions to environmental problems in exploration and production and refining. The U.S. petroleum industry is already undertaking this challenge; however, the industry needs help. The domestic petroleum industry is devoting ever more of its resources toward meeting a growing body of environmental regulations as the price of oil declines. The inevitable result has been severe reductions in work force and closings. The domestic petroleum industry has lost 500,000 jobs in the last decade including 10,500 in the last six months. It is time for the federal government to re-evaluate the regulatory burden on the domestic petroleum industry and to help the industry develop the cost-effective technologies it needs to meet meaningful environmental standards. With a dwindling technical work force caused both by redirecting E&P operations and layoffs, the domestically-oriented work force is increasingly focused on environmental compliance, not technology development. Industry laboratories which were once on the forefront of technology development are now empty and dormant. What is left of the once busy industry research centers are technical service centers. The former research leaders still employed are now "putting out fires" and the independent producers rarely have a technical staff for any kind of R&D. The U.S. petroleum industry is relying more and more on technical professionals in academia for research. However, budgets are tight and only the most immediate of problems are being addressed. Even a 3-5 year time frame is often farther out than the industry can afford to look

The federal government should direct a larger segment of R&D resources to the development of new, cost-effective environmental technologies to support the domestic petroleum industry. A critical segment of this effort should be support of university research. A major part of this research funding should place emphasis on providing near-term solutions to these problems with direct input from the petroleum industry. In partnership with industry, IPEC can help provide these solutions.

The petroleum industry will measure the relevancy of research in terms of the tangible results produced. In the context of the vision of IPEC this means new, cost-effective technology made available to industry. The greatest impact on competitiveness on the domestic petroleum industry will be made by improved solutions to problems which have a significant economic impact on the industry. The research conducted within IPEC will, therefore, by necessity have a strong applied element.

IPEC will use an integrated team approach to technology development. The teams will not only be integrated with respect to scientific or engineering discipline but also integrated with respect to the technology development process itself. In other words the teams will also consist of members whose expertise is in scale-up and commercialization of new technology. If the work product of the team is to make a significant impact in the domestic petroleum industry the most important member of the team will be the end user of the technology. A teaming of investigators from different disciplines and representing different levels of the technology development process will greatly facilitate communication among the investigators and keep the team focused on solving the problem. The team approach is certainly the shortest path to making a meaningful impact on the competitiveness of the domestic petroleum industry.

This team and systems approach to solving real problems in the domestic petroleum industry will be the hallmark of IPEC. Fundamental research will be coupled with bench-scale testing of concepts, pilot testing, field demonstrations and technology transfer. The end user of the technology will always be heavily involved in technology development as an advisor and hands-on participant. As an investment in future technology development, undergraduate and graduate students will be integrated into every aspect of the work of the consortium. Undergraduate students will gain valuable experience working on consortium projects while graduate students will use consortium research work for their theses and dissertations. The integrated approach to technology development will give these students much needed pilot and field experience and industrial contacts.

Competitive business practices are perhaps equal in importance to technology development, especially to the independent producer. The development of new business practices with respect to accounting, taxation, finance, forecasting, etc. are needed which can put the producer in a better position to determine the financial risks of potential environmental costs and manage those risks in order to maximize profitability. Reduced financial risk and growth create jobs.

### 2. *Training of environmental professionals as an investment in technology, policy and business development.*

IPEC universities will continue to graduate scientists and engineers who have a strong foundation in a basic engineering discipline, physical science, or biological science with additional training in environmental technologies at the undergraduate or graduate level to produce environmental specialists. Environmental issues cut across many disciplines. Therefore, this additional training is cross disciplinary to give students a broad understanding of environmental problems. This includes environmental law and policy and the financial and economic impact of environmental regulation on the domestic petroleum industry.

Environmental policy curricula at IPEC universities will be enhanced to include a prerequisite foundation in a field of engineering or science. Those who shape environmental policy should fully understand the impact of those policies. IPEC universities also will develop new curricula to explore the boundary between environment and business in terms of accounting practices, economics, finance and taxation. A new kind of environmental specialist, invaluable to the petroleum industry, can arise out of the area where issues of environment and business converge.

In addition to training the environmental specialist, IPEC universities are committed to making all of their graduates environmentally aware. This is especially true of graduates in technical fields whose employment activities can have a direct environmental impact. These curricula will be enriched with an environmental component integrated into their course of study. The result of this enrichment will be a scientist or engineer who considers the environmental impact of a project up front and minimizes wastes.

### *3. Dissemination of information regarding technology development, legal and regulatory issues, and business practices which can impact the competitiveness of the domestic petroleum industry*

Research results from all IPEC technology and business practice development projects will be documented through standard EPA reporting procedures. IPEC investigators also will deliver papers and contribute journal articles on noteworthy achievements. All resulting citations can then be picked up and disseminated through such standard online databases as DOE's "Energy Science and Technology", the American Petroleum Institute's "APILIT", and TU's "Petroleum Abstracts".

IPEC also will provide a central repository for all reports, papers, and articles resulting from its research projects. These documents will be available on demand from the repository for the fulfillment of external orders. Where appropriate, IPEC research results also will be compiled into databases for nationwide access via Internet. Information concerning the databases will be distributed to the domestic petroleum industry and other interested users through exhibits at selected conferences, the trade literature, target mailings and Internet Listserv messaging. Every effort will be made to guarantee equity of access throughout the petroleum industry. IPEC also will establish a feedback mechanism through which the major and independent oil and gas producers can inform the R&D community of their experiences with new technologies as well as their technology needs.

IPEC also will serve as a resource for Congress, federal and state regulatory agencies and the domestic petroleum industry to provide an objective assessment of existing or proposed environmental regulations on the basis of cost/benefit and risk analysis.

Lastly, there also is an acute need for readily accessible continuing education opportunities for scientists, engineering, legal professionals, accountants, economists, etc. in the petroleum industry to provide environmental retooling and continual updating. The environmental field is progressing rapidly. Activities such as focused environmental seminars, workshops, short courses, telecourses, etc. can sharpen the skills of participants and act as conduits for new ideas and technologies into the petroleum industry.

## Organization and Operating Practices of IPEC

The Integrated Petroleum Environmental Consortium (IPEC) is a consortium of four universities in Oklahoma and Arkansas: The University of Tulsa (TU), The University of Oklahoma (OU), Oklahoma State University (OSU), and The University of Arkansas (UA) at Fayetteville. The fiscal center of IPEC will be the University of Tulsa which is the sole subcontractor to BDM-Oklahoma which is the M&O contractor for the Bartlesville, OK Department of Energy facility, the National Institute for Petroleum and Energy Research (NIPER). Through NIPER, BDM Oklahoma and TU are responsible for implementation of the National Oil Program for the DOE. IPEC will be an extension of this effort.

The operational activities of IPEC will be directed by an executive committee composed of two faculty members and one research administrator from each of the four universities (TU, OU, OSU, UA). The chair of the executive committee will rotate annually among TU, OU, OSU and UA. IPEC will be very much industry driven to ensure that the consortium is meeting the needs of the industry and fulfilling its mission. The executive committee will be advised by an industrial advisory board composed of technical, legal and business environmental professionals from major oil companies and independent producers. The industrial advisory board will have the last word on funding decisions for technology development projects. If, in the opinion of the advisory board, a proposed project does not help fulfill the mission of the consortium the project will not be funded. All four of the IPEC universities have signed a memorandum of understanding forming IPEC and agreeing to this organizational structure.

## The South-central Environmental Resource Alliance (SERA)

In order to bring additional resources into IPEC and further ensure the success of its programs, IPEC has entered into an alliance with the Waste-management Education and Research Consortium (WERC). WERC was established through DOE sponsorship to expand the nation's capability to address waste management issues through education, technology development and technology transfer. WERC's special niche is radioactive, hazardous and solid waste management. WERC's members are New Mexico State University, University of New Mexico, New Mexico Tech, and Navajo Community College in collaboration with Sandia National Laboratories and Los Alamos National Laboratory. The missions of IPEC and WERC will be enhanced by a synergistic collaboration between the two consortia as the South-central Environmental Resource Alliance.

### Funding of IPEC

IPEC is seeking appropriations of $4 million for FY 1997 and the succeeding fiscal years 1998, 1999, 2000, and 2001 through the Environmental Protection Agency. The consortium will be responsible for private sector and state support of no less than 25% of federal appropriations in FY 1997 and an average of 50% of federal appropriations over a five year period. The consortium will be subject to review as of September 30, 1998 and each 12-month period thereafterto ensure the effective production of data, regulatory assessments, and technology development meeting the stated goals of the consortium.

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## PREPARED STATEMENT OF DAVID B. ISBELL, CHAIR, ADVISORY COMMITTEE, VETERANS CONSORTIUM PRO BONO PROGRAM

MR. CHAIRMAN AND DISTINGUISHED MEMBERS OF THE COMMITTEE:

On behalf of the Veterans Consortium Advisory Committee, I submit herewith a request for a fiscal year 1997 appropriation for the Court of Veterans Appeals Pro Bono Program -- a program for which the Consortium has, from inception, had operational responsibility.

The Program's budget for next year contemplates operating expenses of $743,838 (over and above the contributions in kind by the organizations participating in the Consortium), as explained below; and that is the amount of the appropriation we request.

We also request, in the interest of allaying concerns of the Court of Veterans Appeals that have been expressed in testimony and correspondence of Chief Judge Nebeker, that the appropriation be separate from the appropriation for the Court's operations, and that it specifically direct the Court to delegate to Legal Services Corporation or to another entity responsibility for oversight and administration of the grants under which the Program operates.

## The History and Operation of the Pro Bono Program

A brief review of the background may be appropriate. As you are aware, the Program was proposed by the Court of Veterans Appeals in 1991, as a means of dealing with the problem presented by the fact that the Court was finding that the overwhelming majority of appellants appearing before it were *pro se* -- that is, without representation. Congress authorized the Court to use up to $950,000 of its funds to establish a project for the provision of legal assistance to *pro se* appellants. See Pub. L. 102-229, 105 Stat. 1710 (1991). The authorizing legislation specifically provided that the Legal Services Corporation (LSC) would make the grants or contracts for such a program, "pursuant to a reimbursable payment" by the Court. LSC in May 1992 issued two Solicitations for Proposals: one for an umbrella program to evaluate cases and to recruit and train volunteer attorneys (the "A" grant); and one for organizations already providing representation to veterans to expand such representation (the "B" grant). The Consortium, which consists of the American Legion, Disabled American Veterans, Paralyzed Veterans of America and National Veterans Legal Services Program, submitted a proposal to LSC for the "A" grant that was accepted. Three of the participating organizations, DAV, PVA and NVLSP (plus another organization, Swords to Plowshares, which has since dropped out of the Program), were awarded "B" grants, under which they undertook to provide representation in a specified number of cases. The two grants together comprise the Program, which commenced operation in September 1992.

The Program has three operational components: Outreach, Education, and Case Evaluation and Placement. The first of these components recruits volunteer lawyers to handle appeals before the Court on a pro bono basis: some 577 attorneys have been recruited so far. The Education component offers a one-day training program, presented in conjunction with the D.C. Bar and also made available in the form of videotapes to lawyers who cannot attend a live presentation; and in addition provides to each volunteer attorney a three-volume Veterans Benefits Manual.

The Case Evaluation and Placement Component, as the name suggests, evaluates the cases of appellants who are *pro se* and who, in response to a notice routinely sent to those appellants who remain *pro se* thirty days after filing of their notice of appeal, indicate an interest in having representation. In any case where this evaluation turns up an issue deserving argument, a memorandum describing the issue is prepared, and the case is assigned to an attorney who has agreed to provide pro bono representation. (The great majority of the Program's cases are placed with volunteer attorneys recruited and trained by the Program's Outreach and Education Components; a minority, consisting of more difficult or emergent cases, are placed through the "B" grant.) In cases that are determined not to merit pursuit of an appeal, the appellants are advised as to the most promising course of action for them to pursue.

The volunteer attorneys are provided continuing education in the form of mentoring assistance: that is, they are given the name of an attorney (or non-attorney Court of Veterans Appeals practitioner) in one of the constituent organizations, with whom they can consult as needed. The Case Evaluation and Placement component also monitors all cases referred to program attorneys, to ensure that filing deadlines are not overlooked.

The table attached hereto as Exhibit A presents some significant statistical information regarding appeals to the Court, and the impact thereon of the Program. As it shows, over the 3-1/2 years of its operation, the Program has provided free representation to more than 700 appellants before the Court; and the appellants represented through the Program have prevailed in 78 percent of the completed cases.

## The FY97 Budget

Attached hereto as Exhibits B and C are a spreadsheet showing the Program's proposed budget for FY 1997, as formally adopted by the Veterans Consortium Advisory Committee, and a page titled "FY97 Proposed Budget Highlights," which explains the principal changes from the current year's budget.

The Court's budget for the current fiscal year (FY96), as submitted to Congress, contemplated that the Program would have a budget of $790,000, as had been approved in FY94 and FY95. The Court requested an appropriation for the Program of $678,000; that reduced figure took into account $112,000 conserved by the Program in prior years, which remained available for Program expenses in FY96. The Court observed that "this is a nonrecurring reduction [in the requested appropriation] that could not be maintained in future years without programmatic changes that the Court does not now anticipate would be desirable."

The Program is currently operating on a revised budget, for both the "A" and "B" grants, of $633,931. This revised budget is $34,278 less than the amount actually expended in the last fiscal year, $44,069 less than the $678,000 in new appropriations for the Program that was in the Court's budget submission, and $156,069 less than the $790,000 contemplated by the Court's budget submission. The amount on which we are now operating is insufficient for the Program to operate as originally envisioned, and we need to make up for the current year's shortfall if the Program is to resume operating at full steam. I should emphasize, however, that, mindful of budgetary exigencies, we are not asking that the Program be restored to its full prior level of appropriated funding.

Increases in the Proposed Budget

The increases contemplated by the proposed budget compared to the current year's budget, as described in the attached "Highlights" document (Exhibit C) would, generally speaking, restore the Program to its operating level in FY95, but they also reflect an anticipated increase in the salary requirements of the new screeners who must be hired, since they will likely have to be found outside the supporting organizations. The increases also include some capital expenditures that are intended to make up for expenditures that have not been made in the current year because of the $40,000 shortfall.

The "B" Grant

As has been indicated, the Program comprises two separate grants, designated the "A" grant and the "B" grant. A majority of the cases in which representation is provided pursuant to the Program involve volunteer lawyers who are recruited, trained, and assigned cases pursuant to the "A" grant. The "B" grant has in each year provided for placement of a specified number of cases, at a fixed price, with one or both of two constituent organizations of the Consortium. The original purpose of the "B" grant was to assure that competent representation would be available in the event that there proved to be an insufficient number of volunteer lawyers -- which, happily, has not occurred. In practice, the "B" grant has been used, on a much reduced level from what was originally contemplated, to provide for the placement of unusually difficult or emergent cases with particularly experienced lawyers. The dollar amount of the "B" grant in FY95 was $53,705 (30 cases @ $1,790 case); in the current year it is $31,825 (19 cases @ $1,675/case) and in the FY97 proposed budget it is $53,550 (30 cases @ $1,785/case). The increase in number of "B" grant cases in FY97 compared to the current fiscal year will simply bring us back to the level of FY95; indeed, we are taking steps to be in a position to increase the potential number of "B" grant cases in the current year to 30, although we will not necessarily place that many cases with the "B" grantee.

Cost of Grant Administration

The proposed budget includes an estimated amount of $20,000 to be paid to Legal Services Corporation or to such other entity as may be delegated to oversee the Program. In each of the fiscal years so far, that entity has been LSC, to which the Court of Veterans Appeals has effectively delegated supervisory and auditing responsibilities. The charge for this service by LSC in FY95 was $16,181; no allowance is made in the FY96 budget for such a charge, and it's uncertain how such a charge will be handled; and the estimate for FY97 is $20,000.

Summary

To recapitulate, the key figures in the proposed FY97 budget are as follows:

| | | |
|---|---|---|
| CE&P | $536,121 | |
| Outreach | 18,620 | |
| Education | 115,547 | |
| B Grant | 53,550 | |
| Subtotal | | 723,838 |
| LSC Administration | 20,000 | |
| TOTAL | | $743,838 |

It should be emphasized that these figures represent the amount of federal funds which it is hoped will be available for the Program. They are over and above the estimated $225,000 worth of contributions in kind anticipated from the constituent organizations of the Consortium; and do not reflect the estimated additional $2,250,000 in free legal services expected to be provided by volunteer attorneys recruited by the Program during the fiscal year.

## Conclusion

In 1988 Congress established judicial review -- a benefit available to all citizens except veterans until that time. But judicial review is meaningless, especially at the appellate court level, without the assistance of a trained bar.

The Pro Bono Program provides that. A trained bar of attorneys who volunteer their time and efforts to help veterans and their widows. And an analysis of each veteran's case, with educational materials and mentoring services.

When all is said and done, we are not talking about cases placed or appeals granted or denied. We are talking about people. Veterans of World Wars, those who fought on the frozen slopes of Korea, in the jungles of Vietnam, and the sands of Iraq. We are also talking about their widows and orphans. This is the constituency the Program serves.

Attachments:

| | |
|---|---|
| Exhibit A: | Pro Bono Program at the U.S. Court of Veterans Appeals |
| Exhibit B: | Veterans Consortium Pro Bono Program Proposed Budget - FY 1997 |
| Exhibit C: | Veterans Consortium Pro Bono Program FY 1997 Budget Highlights |

EXHIBIT A

## PRO BONO PROGRAM AT THE U.S. COURT OF VETERANS APPEALS

| | FY 93 | FY 94 | FY 95* | FY 96* (10/1/95-3/31/96) | PROGRAM TOTAL* |
|---|---|---|---|---|---|
| Total Cases Filed at CVA | 1,265 | 1,131 | 1,213 | 566 | 4,175 |
| Cases Filed Pro Se | 1,044 | 914 | 949 | 423 | 3,330 |
| Pro Bono Program Application Forms Sent | 836 | 640 | 811 | 369 | 2,656 |
| Veterans Who Filed Applications For Program Consideration | 574 | 449 | 609 | 218 | 1850 |
| Veterans Who Received Free Attorney | 231 | 187 | 201 | 92 | 711 |
| Veterans Who Received Some Form of Legal Assistance (but no representation due to program ineligibility) | 343 | 262 | 327 | 152 | 1084 |
| Percent of Program Eligible Veterans Who Received Representation | 100% | 100% | 100% | 100% | 100% |
| Program Cases Completed During FY | 52 | 147 | 206 | 60 | 465 |
| Program Cases In Which VA Error Found | 45 | 112 | 161 | 43 | 361 |
| Percent Of Cases In Which Veteran Prevailed In Litigation Through Program Efforts | 86.5% | 76% | 79% | 72% | 78% |

*Figures subject to minor revision.

# EXHIBIT B

Veterans Consortium Pro Bono Program
Proposed Budget FY 1997

| | | Outreach FY 97 | Education FY 97 | Screening FY 97 | Proposed Budget 10/1/96-09/30/97 | Outreach FY 96 | Education FY 96 | Screening FY 96 | Budget 10/1/95-09/30/96 | Actual 10/1/94-09/30/95 |
|---|---|---|---|---|---|---|---|---|---|---|
| Salaries - Attorneys | 1 | 7,379 | 48,004 | 127,845 | 183,228 | 2,151 | 36,694 | 149,018 | 187,863 | 186,183 |
| Salaries Non-attorney representatives | 2 | 0 | 0 | 123,236 | 123,236 | | | 84,632 | 84,632 | 90,205 |
| Salaries - Other | 3 | 1,476 | 8,691 | 81,808 | 91,975 | 3,198 | 22,310 | 61,147 | 86,655 | 92,909 |
| Employee Benefits | 4 | 2,303 | 11,874 | 95,954 | 110,131 | 1,656 | 18,263 | 101,525 | 121,444 | 127,071 |
| Consultant - Grant Administrator | 5 | 2,042 | 11,570 | 0 | 13,612 | 0 | 0 | 0 | 0 | 0 |
| Total Personnel | | 13,200 | 80,139 | 428,843 | 522,182 | 7,005 | 77,267 | 396,322 | 480,594 | 496,368 |
| Space - Rent | 6 | 1,915 | 9,000 | 61,448 | 72,363 | 1,824 | 8,926 | 58,522 | 69,272 | 64,943 |
| Equipment Rental & Maintenance | 9 | 200 | 1,500 | 5,253 | 6,953 | 172 | 1,469 | 7,651 | 9,292 | 6,691 |
| Office Supplies & Expense | 10 | 1,275 | 4,100 | 10,000 | 15,375 | 642 | 3,916 | 9,529 | 14,087 | 14,016 |
| Telephone | 11 | 280 | 870 | 7,850 | 9,000 | 255 | 801 | 7,565 | 8,621 | 6,502 |
| Travel | 12 | 150 | 1,500 | 1,000 | 2,650 | 181 | 1,507 | 1,009 | 2,697 | 1,745 |
| Library | 15 | 150 | 1,000 | 1,850 | 3,000 | 132 | 743 | 1,529 | 2,404 | 1,808 |
| Insurance | 16 | 200 | 700 | 4,000 | 4,900 | 127 | 666 | 3,638 | 4,431 | 3,781 |
| Dues and Fees | 17 | 50 | 195 | 50 | 295 | 50 | 179 | 55 | 284 | 209 |
| Audit | 18 | 200 | 623 | 827 | 1,650 | 64 | 632 | 803 | 1,499 | 802 |
| Property Acquisition | 19 | 0 | 0 | 10,000 | 10,000 | 0 | 0 | 0 | 0 | 4,416 |
| Contract Services to Applicant | 21 | 0 | 0 | 5,000 | 5,000 | 0 | 0 | 2,125 | 2,125 | 5,147 |
| Other | 22 | 1,000 | 15,920 | 0 | 16,920 | 0 | 6,800 | 0 | 6,800 | 8,076 |
| Total Non-Personnel | | 5,420 | 35,408 | 107,278 | 148,106 | 3,447 | 25,639 | 92,426 | 121,512 | 118,136 |
| Total "A" Grant | | 18,620 | 115,547 | 536,121 | 670,288 | 10,452 | 102,906 | 488,748 | 602,106 | 614,504 |
| "B" Grant | | | | | 53,550 | | | | 31,875 | 53,705 |
| Oversight | | | | | 20,000 | | | | 0 | 16,181 |
| Grand Total | | | | | 743,838 | | | | 633,981 | 684,390 |

## EXHIBIT C

# VETERANS CONSORTIUM PRO BONO PROGRAM
## FY 1997 Proposed Budget Highlights

### CASE EVALUATION & PLACEMENT (CEPC) $536,121

CEPC requests a $47,373 increase over the approved FY 1996 budget.

Budget Increase Summary:

**Personnel** costs reflect an increase of $32,521 due to adjustments in salaries and benefits. Salaries for screeners reflect the estimated additional cost of hiring screeners from outside the supporting organizations, which appears likely to be necessary. Two screeners will be provided at no cost to the Consortium and a new position for one screener is budgeted for 6 months.

**Property Acquisition** for $10,000 would allow us to upgrade our existing computers and network and to purchase a Pentium 133 MHZ computer. This amount includes hardware and software.

**Contract Services to Applicant** would increase by $2,875 to accommodate the need to use additional computer contractors services to improve computers and network.

### OUTREACH $ 18,620

Outreach requests an $8,168 increase over the approved FY 1996 budget.

Budget Increase Summary:

**Personnel** increases by $6,195 because we anticipate an increase in recruiting. We assume a greater need for lawyers in FY '97 because of increased BVA output; the budget also assumes we will increase out-of-town outreach. Recruitment was on hold for most of last summer and late fall. Personnel includes a new line item to account for grant administration done by a consultant (and shifts costs from salaries-other line). (Salaries are based on a 5% increase and benefits were decreased by 6%).

**Office supplies and expenses** includes $1,100 to cover the cost of mailing 2000 brochures.

**Other** includes $1000 to reprint the standard brochure.

### EDUCATION $115,547

Education requests an increase of $12,641 over the approved FY 1996 budget.

Budget Increase Summary:

**Personnel** line increased by $3,872 because we will produce a new appellant brochure and video tape (and edit tape) for a new training tape. As indicated above base salaries reflect a 5% increase and benefits decreased by 6%.

The **Other** line increases by $9,120. The *Veterans Benefits Manual* will be revised and printed. We anticipate distributing up to 112 copies through the program and estimate the cost will average $97.50 per copy ($10,920). (Until the new VBM is available we will continue to distribute the old manual.) Design and produce a new program brochure for appellants ($1,500), as recommended by the Peer Review Team. $3,500 covers the cost for taping one training (not done in 1996) and purchasing tapes for reproduction.

| | |
|---|---|
| **"B" GRANT** | $ 53,550 |
| **GRANT ADMINISTRATION** | $ 20,000 |
| **TOTAL** | $743,838 |

## PREPARED STATEMENT OF THE UNIVERSITY OF PUERTO RICO

### A. Introduction and Background

Mr. Chairman, and other members of the Committee, on behalf of Dr. Norman I. Maldonado, President of the University of Puerto Rico (UPR), the University thanks you for the opportunity to provide testimony, during your deliberations on the FY97 VA-HUD-Independent Agencies Appropriations bill, regarding efforts underway to increase the participation of Hispanic professionals within Federal science and research programs.

The University of Puerto Rico, founded in 1903 as a land grant institution, is the state university of Puerto Rico and the largest Hispanic Institution of higher education in the United States. It is also one of the largest multi-campus systems in the country. The UPR has over 62,000 students (66 percent of whom are women), 5000 faculty members, four major campuses and six regional colleges and other units throughout the island. The University operates schools of Law, Science, Mathematics, Engineering, Medicine, Architecture, Humanities, Education and Social Sciences and offers over 360 academic programs, all fully accredited by national organizations. As the premiere Hispanic institution in the United States, the University of Puerto Rico has graduated more than 250,000 students, many of whom have made significant contributions to American society.

### B. Accomplishments

As background, the Committee should know that the University ranks number one among all U.S. institutions in terms of the number of Hispanic students that go on to obtain Ph.Ds in science and engineering. For instance:

- One in ten students attending the University's largest campus at Rio Piedras that receive a Bachelors degree in science go on to obtain Ph.Ds.

- The University is the largest producer of Hispanic women professionals in the nation. UPR at Mayaguez is the 16th largest engineering school in the nation, enrolling over 4,000 students, of which about 1,600 are women.

- Over 20 percent of the MDs and BS degrees in science, engineering and mathematics granted to Hispanic Americans have been awarded by The UPR.

- Among those Hispanics receiving Ph.Ds in science, engineering and mathematics, 20 percent did their undergraduate work at The UPR.

- The UPR is the leading source of Hispanic engineers for the National Aeronautics and Space Administration (NASA).

- The UPR holds the unique distinction of being classified as a land grant, sea grant and space grant institution of higher education.

No other school in the Nation can boast these statistics. This enormous talent pool of Hispanic students, faculty and researchers has contributed to the development of the island, other parts of the Caribbean, and the nation. Consider, for example, that while Puerto Rico is an island with a population of about 3.6 million people, a paper published just last summer entitled, *The Economic Relation of the United States and the Puerto Rican Economies: An Interregional Input-Output Approach*, estimated that activities underway on the island contribute $39.8 billion to the U.S. Gross Domestic Product annually. Consider also, that almost every one of our nation's major pharmaceutical companies, approximately 30, have a plant on the island generating about $6.7 billion of the island's total Gross Domestic Product. The vast majority of the Chief Operating Officers managing these companies in Puerto Rico are graduates of The UPR.

## C. Challenges and Recommendations

Mr. Chairman, in this historic era, we have experienced the end of the Cold War, the dawn of the information age, and the emergence of a global economy that is knowledge-based. In order to sustain the nation's current competitiveness in this environment, as well as the current quality of life for all citizens, all persons must be technologically-literate and have strong skills in science and mathematics. Most notably, as the fastest growing population in the United States, persons of Hispanic origin will play a key role in determining whether our nation effectively meets the economic, technological and workforce challenges that lie ahead.

Over the last decade, a number of Federal initiatives have helped to develop the education and research capability of Hispanic Serving Institutions (HSI). HSIs are defined as those institutions in which 25 percent of the total student population are of Hispanic origin. While progress made by these schools has been significant, there are too few HSIs with established graduate-level education and research programs to meet the needs of a rapidly growing U.S. Hispanic population. Therefore, it is critical for the nation to formulate a plan to build the capacity of graduate-level HSIs, so that we may effectively meet the challenges facing the nation.

As the nation's leading Hispanic Institution for science and research, The UPR has established a carefully constructed plan to make the Institution more competitive in research and academic development at the University level. As a part of its overall strategy, the University has worked in partnership with the Puerto Rico Department of Education in developing a strong science and mathematics K-12 program. In using the following Federal programs as catalysts: NSF, NASA, EPA, and DOE EPSCoR funding, as well as NSF's Minority Research Centers of Excellence (MRCE), Alliance for Minority Participation (AMP) and SSI, The UPR has been able to play a significant role in the reform of science and mathematics instruction in school sytems throughout the island.

Through Puerto Rico-SSI, a total of 80 schools have been bootstrapped and important changes in school cultures and student performance in science and mathematics have been achieved. For measuring excellence and accountability purposes, the National Assessment of Educational Progress (NAEP) test was administered to both private and public schools on the Island. The test revealed a 14-point gap in performance between the private schools, where middle-class students attend, and the public schools, which serve the large, low-income population of Puerto Rico. The intervention of the SSI schools already has made an impressive difference. The performance of these schools on the NAEP reveals that the gap has been reduced by one half. Additionally, through the Department of Education's Goals 2000 and the Department of Labor's School-to-Work initiative, The UPR is extending and using the advances learned in science to other disciplines.

Furthermore, with the help of Federal funding from the National Science Foundation (NSF), the Environmental Protection Agency (EPA), and the National Aeronautics and Space Administration, The UPR has successfully competed with 19 other states for EPSCoR funds and has used these funds to build a solid research base at the University. This base is now being linked to government and industry, and The UPR has helped spearhead the establishment of the Governor's Council for Science and Technology. This Council will guide Puerto Rico's development of an R&D base and the scientific community that will strengthen and provide local roots to its high technology industry, enabling the Island to become internationally competitive in this area of economic activity.

In reviewing these efforts, the contributions of the UPR to the nation's economy and overall well-being are clear. Federal assistance to The UPR has made a difference. Furthermore, as the nation's attention turns to Latin American markets, there is a unique and pivotal role the University systems graduating bilingual students. In this context, The UPR strongly emphasizes the critical need for continued Federal assistance to the Commonwealth of Puerto Rico and the UPR, particularly as our initiatives relate to NSF, NASA and EPA-sponsored activities.

In this vein, The University asks that the Committee exhibit the leadership and vision required to prepare our students, and ultimately our nation for the workhorse challenges that lie ahead. Specifically, I ask that you:

- Provide $56 million in funding for the NSF EPSCoR program; $10 million for the NASA EPSCoR activities and $5 million for EPA EPSCoR;
- Fund the NSF Minority Research Centers of Excellence (MRCE) program;
- Continue to level fund the NASA programs which support Joint Ventures in Space Science, Space Grants, and the Raytheon-UPR International project;
- Level fund the Alliance for Minority Participation (AMP) program;
- Maintain level funding for the NSF State-wide Systemic Initiative; and
- Provide at least $100 million in support for NSF Academic Research Infrastructure (ARI) program.

With the assistance of these important and visionary Federal funding sources, the University of Puerto Rico will remain a leader in the training and development of Hispanic Scientists, engineers, and entrepreneurs, affirming our place as the major source of skilled professional needed to lead the nation in the 21st century.

Mr. Chairman, again, thank you for allowing the University of Puerto Rico to provide this written statement for the record.

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## PREPARED STATEMENT OF THE WATER ENVIRONMENT FEDERATION

The Water Environment Federation, an international organization of engineers, scientists, and others dedicated to improving water quality, urges you to support an adequate level of funding for the national water quality programs administered by the U.S. Environmental Protection Agency in their Fiscal Year (FY) 1997 budget request.

In particular, WEF believes that those EPA activities that support watershed management should be made a priority. The Clean Water Act of 1972 established minimum technology-based treatment standards for wastewater discharges. Since that time, substantial improvements in the quality of our nation's waters have been realized. The professional community recognizes that further progress in enhancing water quality and protecting drinking water sources will depend on our ability to address many pollutant sources and adverse environmental conditions which fall outside the traditional water quality regulatory framework. Examples of these sources include runoff from farm fields and city streets, and atmospheric deposition. Examples of adverse environmental conditions include habitat destruction, biological stresses, and hydrologic changes. Full water quality restoration requires a holistic approach that considers all sources and ecological stressors.

Water quality protection is currently addressed by legislative and regulatory programs that, in general, address individual factors and sources. These programs, some voluntary, some mandatory, are almost all costly. Yet our current approach provides no means to effectively set priorities and allocate our limited resources. Furthermore, water quality programs are designed in the context of political boundaries, and are often unable to address key cross-boundary effects.

This situation has resulted in a renewed interest in water quality planning and management on a watershed basis. In fact, both Congress and EPA have increasingly emphasized watershed management. The watershed approach allows for a comprehensive and integrated approach to protecting all water resources, including uplands, drainage basins, wetlands, and surface and ground waters. This approach has diverse support, including Water Quality

2000, a broad coalition of federal, state, and local governments, industries, professional and scientific societies, and environmentalists. Congress should support those activities which provide flexibility and encourage the management of water on a watershed basis.

The proposed FY 1997 budget for EPA provides an opportunity to make watershed management activities a funding priority. EPA is emphasizing in its water program support request a number of elements related to watershed management. Other key budget items that support watershed management include capitalization of the clean water SRF, funding for water quality research, and nonpoint source pollution program funding,

## *WATER QUALITY PROGRAM SUPPORT*

***WEF supports EPA's funding request for the water quality program budget.*** This part of the budget request, now spilt between the Environmental Programs and Management Account, Science and Technology Account, and State, Tribal, and Local Grants Account, would provide almost $517 million to carry out national water quality programs. Included in this is $274 million for core Office of Water functions, including permitting and technical assistance, and $215.7 million for grants to states, including $80.7 million for program administration (Sec. 106 grants).

A number of elements in the water program budget proposal should be made priorities for funding as they are necessary tools for supporting and encouraging watershed management. These elements include:

- Promoting effluent trading;
- Streamlining National Pollutant Discharge Elimination System (NPDES) requirements;
- Integrating the entire NPDES process with a watershed approach to allow watershed-specific flexibility and coordination of multimedia problems;
- Developing verification protocols for the viability and performance of water quality management technologies;
- Increasing technical assistance to states and local governments;
- Disseminating new and revised computer models and geographic information systems;
- Developing new guidance for controlling nonpoint source pollution that will encourage a greater focus on priority watersheds;
- Supporting the work of the Wet Weather Advisory Committee, which has brought together a wide range of stakeholders to comprehensively address technical and policy issues relating to stormwater, sanitary sewer overflows, and combined sewer overflows;
- Assisting states in using environmental indicators to measure progress in reaching watershed goals; and
- Enhancing coordination of water quality data collection with states and other federal agencies;

As we move to encourage managing water quality on a watershed basis, new resources will be needed to provide the necessary modelling, monitoring, and technical support. Additional resources also will be needed to carry out increased cost-benefit and risk assessment requirements.

## STATE REVOLVING FUND (SRF) LOAN PROGRAM

***WEF supports an appropriation of at least $2 billion for the Clean Water Act SRF capitalization program in FY 1997.*** EPA's most recent assessment of funding needed by state and local governments to comply with requirements of the Clean Water Act exceeds $137 billion. Large funding needs include secondary treatment facilities, minimum combined sewer overflow control, and water quality permitting. Continued federal assistance for municipal wastewater treatment facility construction is crucial if we are to fulfill this basic public health need and meet watershed-based clean water goals. New requirements now being implemented, such as controls on combined sewer overflows and stormwater, will require significant new expenditures by state and local governments in order to achieve compliance. Small and disadvantaged communities are facing especially difficult problems in providing the funding to meet their clean water needs.

Last year, the House passed HR 961 to reauthorize the Clean Water Act. Recognizing the tremendous need facing state and local governments, this bill would continue the SRF program through FY 2000 at $2.3 billion per year. The bill also would provide more flexibility to states in how SRF funding is utilized. WEF supports a reauthorized Clean Water Act that includes these provisions.

The Clinton Administration has requested $1.35 billion for the SRF in FY 1996. WEF believes that at least $2 billion should be appropriated in FY 1997 in order to adequately support SRF capitalization and help meet wastewater treatment facility construction needs.

## WATER QUALITY RESEARCH

***WEF supports an increase in EPA's water quality research budget.*** More research is needed to ensure that regulatory and management decisions are technically credible, cost-effective, and based on sound science. Watershed management will only be successful if we have a more thorough understanding of ambient water quality conditions and the impact and interaction of both point and nonpoint sources of pollution.

In addition, Clean Water Act requirements, including advanced wastewater treatment processes, biosolids management, combined sewer overflow abatement, stormwater controls, removal of toxic constituents, and water quality monitoring, continue to increase while the resources needed to conduct research on how to meet these challenges continues to decline. Research and technology development are vital to improving our understanding and base of knowledge regarding water pollution problems, and to developing solutions which will minimize, eliminate, or prevent adverse environmental and human health impacts.

EPA's water quality research budget has declined from $67 million in 1980 to $23 million currently. The Administration has proposed increasing the water quality research budget to $26.3 million in FY 1997, and WEF urges Congress to support this increase.

***WEF also urges the subcommittee to continue its support of cooperative research efforts between EPA and the Water Environment Research Foundation (WERF).*** The Water Environment Research Foundation was established to meet the pressing need for basic water quality research. Over the past several years, the Foundation has leveraged $2.7 million in federal contributions administered through EPA and, through other fees assessed to research users, is currently conducting over $16 million worth of water quality research in high priority areas. These areas include watershed management, surface water quality, wastewater treatment processes, risk management and assessment, and effluent and residuals disposal.

The Water Environment Research Foundation is a tremendous example of a successful public-private partnership. It represents an ongoing collaborative effort between the federal government, cities, and pre-eminent water quality specialists in furthering our understanding of water quality problems and solutions. This understanding is vital to meeting national clean water requirements. WEF urges the subcommittee to support WERF's request for $5 million in FY 1997.

## *NONPOINT SOURCE POLLUTION*

***WEF supports adequate funding for addressing nonpoint sources of pollution.*** According to scientists and engineers in the water environment field, at least half of the remaining sources of water quality impairment are caused by diffuse runoff from rural and urban lands. The EPA FY 1997 budget request includes $100 million in assistance to states to address this problem through their nonpoint source pollution management programs. Investments in best management practices and other measures geared toward meeting local water quality needs could result in substantial reductions in overall pollutant loadings from agriculture, mining, construction, street, and rooftop runoff.

WEF urges Congress to move expeditiously to approve funding for these important water quality programs. The protracted negotiations over the FY 1996 budget have created a hardship on states, municipalities, and the private sector in wastewater management planning and disrupted ongoing initiatives. Stability in funding and program implementation is critical to maximizing the environmental and public health benefit. Ironically, the budget impasse has delayed needed reforms to EPA programs, many of which are being developed in partnership with stakeholders like WEF.

This concludes the Water Environment Federation's statement. If you have questions or would like additional information, please contact me at (703) 684-2400.

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***The Water Environment Federation (WEF) is a not-for-profit technical and educational and professional organization devoted to providing leadership and guidance in the preservation and enhancement of the global water environment. Founded in 1928, our more than 42,000 members include environmental, civil, and chemical engineers; biologists, chemists, and other scientists; wastewater treatment plant operators and managers; local, state, and federal government officials; laboratory technicians; college professors and researchers; industrial water quality managers; and, equipment manufacturers and distributors. WEF members are the professionals involved directly in protecting and restoring water quality throughout the U.S. and abroad.***

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